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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

FEBRUARY, 1871.



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MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,

Statistical Division, February 28, 1871.

SIR: I herewith report for publication statistics showing the relative numbers and prices of farm stock, as compared with returns made in February of last year; also a variety of extracts from correspondence, a copy of the circular of the Commissioner of Agriculture calling for aid for the farmers of France, and articles on the New York Agricultural Society, British improvements in plows, scientific notes, market prices of farm products, meteorological tables and notes, &c.

J. R. DODGE,
Statistician.

Hon. HORACE CAPRON,
Commissioner.

RELATIVE NUMBERS AND PRICES OF FARM STOCK.

The February circular was intended to obtain a comparative view of the numbers and prices of farm stock. Returns have been received from all the States, showing a small increase in numbers, taking the whole country together, in all animals except sheep. The increase of swine has been largest; that of cattle and horses moderate, slightly in excess of the advance in population.

There is no increase of horses in the northern half of New England, and but a slight advance in Massachusetts and Rhode Island. New Jersey and Delaware have scarcely sustained the figures of last year, while New York and Pennsylvania have exceeded them. The Southern States, excepting Texas, return larger numbers, as do all the Western States, Nebraska presenting an increase of 15 per cent., and Kansas 20 per cent. The average increase is about three per cent. The prices of horses are lower, as a rule, than in February of 1870. A slight decrease in the number of mules is reported in New Jersey, Maryland, Virginia, Florida, Ohio, and Minnesota, and elsewhere an increase of from one to six per cent., Kansas and Nebraska only exceeding that rate, their percentage being respectively fifteen and sixteen per cent. A reduction in price similar to that noticed in horses is reported. The following statement affords a fair illustration of the range of prices of horses:

	1870.				1871.			
	One year.	Two years.	Three years.	Over 3 years.	One year.	Two years.	Three years.	Over 3 years.
Illinois	\$29 63	\$45 76	\$65 33	\$95 02	\$28 57	\$44 60	\$66 66	\$93 93
Ohio	34 86	54 08	78 00	106 34	34 70	54 00	77 47	102 92
Kentucky	40 91	58 08	76 75	102 25	36 14	52 75	72 42	96 35
Georgia	42 59	68 62	101 58	142 16	40 20	63 54	92 53	129 45
Texas	13 04	21 43	26 31	42 82	12 06	18 19	26 96	45 52

A decrease in milch-cows is observed in Maine and New Hampshire, many having been sold there last fall in consequence of the drought and reduced supply of hay; and also in Maryland, North Carolina, Alabama, and Texas. There has been no increase in New Jersey and Delaware. The average total increase appears to be about three per cent. Kansas claims the largest increase, reaching 20 per cent.

Of oxen and other cattle the following States report a decrease: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New Jersey, Maryland, Alabama, Louisiana, Texas, Kentucky, and California. The States east of the Mississippi have scarcely maintained the numbers of last year. The aggregate numbers of all the States will not show an increase of much more than one per cent.

A decrease in the numbers of sheep of five per cent. is indicated. The only States showing increase are Delaware, Florida, Tennessee, Nebraska, California, and Oregon. The largest relative increase is 31 per cent. in Oregon, and 12 per cent. in California.

All the States report an increase in swine except Connecticut, Maryland, North Carolina, and Texas. The total average increase appears to be about 10 per cent. The percentage of increase is placed at 2 in Kentucky, 7 in Ohio, 14 in Illinois, 18 in Minnesota, 27 in Kansas.

The decline in the price of swine is general, yet not universal—in Ohio, young hogs and 12 months old, from \$6 95 to \$6 20; \$6 32 to \$5 79 in Illinois; \$3 53 to \$3 37 in Missouri; \$6 47 to \$5 28 in Iowa; \$10 25 to \$8 77 in New York; \$14 55 to \$11 60 in Massachusetts; \$3 63 to \$3 46 in Tennessee; \$3 51 to \$3 26 in Mississippi. An increase is observed in Georgia from \$2 67 to \$3 68; \$3 57 to \$4 77 in California; \$6 11 to \$6 90 in Nebraska; \$5 16 to \$6 93 in Kansas.

Table showing the relative percentage of numbers and prices of farm stock in February, 1871, as compared with the returns of February, 1870.

STATES.	HORSES.					MULES.					MILCH COWS.	
	Total number of horses compared with that of Feb- ruary, 1870.	Average price per head under 1 year old.	Average price per head between 1 and 2 years old.	Average price per head between 2 and 3 years old.	Average price per head over 3 years old.	Total number of mules compared with that of Feb- ruary, 1870.	Average price per head under 1 year old.	Average price per head between 1 and 2 years old.	Average price per head between 2 and 3 years old.	Total number of milch cows com- pared with that of February, 1870.	Average price per head at this time.	
Maine.....	100	\$33 35	\$50 50	\$74 72	\$100 77	.....	.....	.....	.....	.....	.....
New Hampshire.....	99	37 00	58 33	81 66	107 50	.....	.....	.....	.....	93	\$36 37
Vermont.....	100	32 50	52 50	82 50	122 50	.....	.....	.....	.....	97	37 50
Massachusetts.....	102	46 40	72 40	101 00	154 16	.....	.....	.....	.....	101	47 50
Rhode Island.....	102	35 75	61 25	90 00	117 50	.....	.....	.....	.....	104	59 16
Connecticut.....	101	47 50	65 50	95 83	130 66	.....	.....	.....	.....	102	44 25
New York.....	102	42 64	68 17	96 55	135 88	.....	.....	.....	.....	103	53 30
New Jersey.....	99	58 50	93 07	130 53	163 21	.....	\$44 22	\$68 11	\$101 33	103	48 51
Pennsylvania.....	103	44 39	73 13	105 57	139 52	.....	62 16	90 53	116 87	100	61 38
Delaware.....	100	40 00	60 00	80 00	120 00	.....	49 66	83 00	121 30	103	46 67
Maryland.....	102	39 16	62 41	80 91	120 25	.....	45 00	65 00	90 00	100	35 00
Virginia.....	102	36 37	56 85	80 00	112 14	.....	50 83	70 00	115 66	98	39 09
North Carolina.....	101	38 37	59 70	85 93	112 25	.....	39 64	68 21	103 92	102	39 69
South Carolina.....	105	37 12	65 37	95 62	119 66	.....	44 18	69 72	108 68	99	22 57
Georgia.....	104	40 20	63 54	92 53	129 45	.....	48 80	76 15	118 79	105	23 22
Florida.....	103	38 33	70 00	115 00	168 33	.....	45 00	75 00	110 00	101	21 61
Alabama.....	108	38 00	65 55	96 11	131 50	.....	50 71	78 57	117 50	103	15 83
Mississippi.....	103	36 91	59 16	89 38	122 00	.....	41 81	67 45	109 23	105	24 50
Louisiana.....	109	26 00	43 00	67 00	96 42	.....	32 50	55 00	102 50	104	25 34
Texas.....	99	12 06	19 19	26 96	45 52	.....	39 42	55 00	102 50	106	24 62
Arkansas.....	105	27 50	41 16	55 66	84 85	.....	19 47	32 66	46 62	97	12 83
Tennessee.....	104	40 85	61 78	84 42	106 64	.....	35 00	53 66	85 42	102	23 14
West Virginia.....	103	35 95	56 50	79 87	106 95	.....	51 28	77 85	112 78	105	23 57
Kentucky.....	102	36 14	52 75	72 42	96 35	.....	40 62	60 50	86 25	102	23 73
Missouri.....	105	30 97	45 91	65 04	88 46	.....	46 28	69 46	92 53	101	28 14
Illinois.....	104	28 57	44 60	66 66	93 93	.....	39 55	57 97	80 41	104	38 14
Indiana.....	104	31 40	49 00	69 64	94 78	.....	39 33	57 97	80 41	104	31 92
Ohio.....	102	34 70	54 00	74 47	102 92	.....	37 36	59 14	85 00	102	37 08
Michigan.....	106	30 19	52 53	76 76	106 24	.....	41 08	63 29	90 94	102	38 50
Wisconsin.....	110	32 34	50 19	74 61	107 38	.....	43 18	57 50	88 86	106	41 15
Minnesota.....	109	35 16	58 41	81 33	110 41	.....	37 50	57 50	81 07	111	35 26
Iowa.....	111	32 03	46 54	65 78	94 23	.....	47 50	67 00	106 66	113	32 91
Kansas.....	120	33 25	50 38	72 26	102 46	.....	39 82	59 34	82 48	112	34 31
Nebraska.....	115	36 36	55 00	79 77	109 09	.....	42 00	63 91	96 00	120	38 46
California.....	104	21 13	31 63	47 03	75 81	.....	82 85	59 57	90 00	116	41 81
Oregon.....	102	22 50	32 00	48 66	84 16	.....	92 87	39 25	55 62	101	46 36
						.....	20 83	30 00	46 66	104	32 25

Table showing the relative percentage, &c.—Continued.

STATES.	OXEN AND OTHER CATTLE.					SHEEP.			HOGS.			
	Total number of oxen and other cattle compared with that of Feb- ruary, 1870.	Average price per head under 1 year old.	Average price per head between 1 and 2 years old.	Average price per head between 2 and 3 years old.	Average price per head over 3 years old.	Total number of sheep compared with that of Feb- ruary, 1870.	Average price per head under 1 year old.	Average price per head over 1 year old.	How many head of sheep were killed by dogs in your county in 1870?	Total number of hogs compared with that of Feb- ruary, 1870.	Average price per head under 1 year old.	Average price per head over 1 year old.
Maine.....	85	\$11 97	\$19 05	\$24 90	\$60 65	83	\$2 30	\$2 88	925	104	\$8 72	\$13 35
New Hampshire.....	95	10 66	19 66	30 30	62 16	90	2 08	2 90	375	105	14 83	26 66
Vermont.....	95	10 00	19 50	35 00	76 00	83	2 25	2 75	200	106	13 50	27 50
Massachusetts.....	99	12 83	23 83	38 00	75 00	70	2 37	3 36	822	106	11 60	27 40
Rhode Island.....	102	14 25	22 50	34 75	65 00	100	3 35	3 87	822	102	15 50	31 00
Connecticut.....	99	13 80	22 00	37 00	63 00	90	3 41	4 29	473	99	12 50	28 50
New York.....	100	12 78	25 53	40 04	64 57	90	2 45	3 37	1,733	108	8 77	18 06
New Jersey.....	99	16 78	29 07	44 17	65 78	98	4 16	5 03	1,161	104	12 50	24 30
Pennsylvania.....	102	13 71	25 10	43 39	63 94	94	2 32	3 45	3,963	108	8 47	17 50
Delaware.....	110	10 00	15 00	25 00	40 00	110	3 00	4 00	.....	100	5 00	10 00
Maryland.....	99	10 54	17 09	26 81	41 68	100	3 17	4 10	1,330	96	6 40	11 86
Virginia.....	102	8 07	13 85	23 96	35 51	94	2 18	2 44	1,623	101	4 11	10 10
North Carolina.....	101	4 06	6 90	11 70	17 97	97	1 23	1 77	5,667	99	3 12	7 36
South Carolina.....	104	4 77	8 55	13 55	19 44	95	1 28	2 18	960	103	3 44	8 44
Georgia.....	102	4 58	7 83	12 05	17 08	98	1 17	1 81	4,365	107	3 68	7 53
Florida.....	103	3 75	5 25	9 00	13 25	110	1 75	1 50	30	100	2 00	5 00
Alabama.....	97	4 90	8 45	13 60	20 20	89	1 11	2 00	975	101	2 94	8 88
Mississippi.....	102	5 10	8 13	13 73	33 46	90	1 43	2 20	1,450	103	3 26	7 83
Louisiana.....	94	6 40	10 50	16 00	23 12	90	1 50	2 41	2,330	110	3 50	6 70
Texas.....	92	2 78	4 37	6 57	11 78	93	1 54	2 59	.....	99	2 05	4 92
Arkansas.....	110	4 00	7 89	12 92	17 64	100	1 54	2 59	130	104	2 31	7 00
Tennessee.....	106	4 85	8 92	14 10	23 50	103	1 27	1 80	3,450	101	3 46	8 13
West Virginia.....	106	11 22	20 47	31 04	44 20	97	1 48	2 33	3,206	110	3 69	8 13
Kentucky.....	99	11 85	19 83	31 30	47 28	96	1 82	2 77	4,697	102	3 65	8 30
Missouri.....	104	9 02	16 01	26 91	41 10	94	1 17	1 76	9,595	116	3 37	7 28
Illinois.....	102	10 13	17 94	28 09	43 00	89	1 48	2 15	7,678	114	5 79	12 71
Indiana.....	101	9 48	18 36	29 63	42 68	88	1 40	1 97	6,372	116	4 72	10 11
Ohio.....	102	13 30	22 97	36 65	53 15	91	1 60	2 49	8,266	107	6 20	12 97
Michigan.....	103	9 35	18 37	30 61	51 09	92	1 58	2 45	1,208	112	5 39	12 91
Wisconsin.....	105	9 15	16 57	26 03	42 16	96	1 94	2 61	71	118	5 05	11 29
Minnesota.....	105	9 15	16 57	26 03	42 16	96	1 94	2 61	71	118	5 05	11 29
Iowa.....	109	9 19	15 95	25 78	40 45	91	1 22	1 88	3,118	124	5 28	12 79
Kansas.....	128	10 16	18 23	29 75	44 07	100	1 64	2 83	322	127	6 93	14 73
Nebraska.....	103	9 72	18 09	31 54	46 36	107	1 39	2 53	1,030	127	6 90	13 63
California.....	98	12 72	19 72	29 90	41 36	112	1 86	2 84	1,030	102	4 77	9 45
Oregon.....	100	10 75	17 00	24 12	32 14	131	1 42	2 06	1,400	115	1 85	4 50

STATES.

EXTRACTS FROM CORRESPONDENCE.

A NEW GRAPE REGION.

Webster, Jackson County, North Carolina.—Permit me to digress from a report of my county to indicate a grape region not generally known. The Blue Ridge at its great southern bend runs nearly east and west for one hundred miles, nearly coinciding with the thirty-fifth parallel of latitude. It here forms a huge mountain wall, in many places six thousand feet high. This great wall is braced on the south side by many lateral ranges, running down between the heads of the rivers, thirty or forty miles in extent. Some of the knobs on these side ranges nearly equal in height the parent mountain. The soil on the top and east side of many of these mountains is a loose and fertile loam, abounding in springs and rivulets of pure water, and clothed in forests of excellent timber. The greater part of this country is yet in a state of nature, and the lands are cheaper than the Government lands of the West. Railroads already built and in process of construction run along the lower spurs of these mountain slopes, sometimes tunneling through them, giving easy access to the markets of the world.

The climate is delightful; the great mountain wall on the north breaking the force of the cold storms of winter and spring, and its great elevation exempting it from the burning heats of summer. Here is the country for the man of weak lungs; and if he has a turn for vine-growing, sheep husbandry, or bee culture, he may obtain health and money at the same time. I know of no country that can surpass it in climate, unless it be the south of Spain, under the Sierra Nevada, or some parts of Lombardy, in Italy.

Among many desirable localities, from the Tryon Mountain, in North Carolina, to the Yona, in Georgia, I would designate the Oconee Mountain, in South Carolina, as possessing peculiar attractions. First, a highway of easy and gentle grade to Walhalla, a German town on the railroad. Second, an elevation of about eight hundred feet above the valleys, and perhaps sixteen hundred feet above tide-water. Third, a level and fertile mountain top of hundreds of acres, with springs and rivulets everywhere. Fourth, a rich and steep mountain on the east side with thousands of acres of sunny and shady slopes, giving every kind of exposure except a western one, with magnificent forests of oak, walnut, poplar, locust, pine, and bass wood. Fifth, the site is beautiful. Looking north we behold a huge mountain for one hundred miles, in winter covered with snow or sleet, and in summer in gorgeous green; looking south the hill country of South Carolina lies spread out like the billowy waves of the ocean far as the eye can reach; a few miles above the climate is too cold for Indian corn; a few miles below grow the cotton, fig, and rice. Sixth, the almost certainty of the grape being healthy there. A mountaineer here and there has planted a few peach trees about his house, and an Isabella or Herbemont vine. No frost has ever killed his peaches, or rust or mildew destroyed his grapes.*

[* A letter of Hon. G. Cannon, of Spartanburg, South Carolina, directed to Senator T. J. Robertson, in presenting the advantages of the Cincinnati and Charleston Railroad, refers to this subject as follows.—ED. REP.:]

“This line passes directly over the Tryon Mountain, where, in certain localities, frosts have never been known by the oldest inhabitants. Fruits of all kinds never failing, and the wild grapes have been gathered there in the month of January, fresh and juicy as in October. This mountain region also affords wonderful grazing advantages, besides producing all the cereals, common to this climate, in great abundance.”

BANDERA, TEXAS.

Bandera County, Texas.—This county lies northwest of and adjoining Bexar County, and is about nine hundred square miles in area. It is abundantly supplied with streams of pure water, including the Medina River and its several tributaries, and numerous smaller creeks sustained by unfailing springs of wholesome limestone water. The Medina River, averaging one hundred and twenty feet in width, furnishes many eligible sites for manufactories, some of which are utilized, there being in operation three saw-mills and one grist-mill, the latter located at Bandera City, the county seat, a prospering village upon the left bank of the Medina, forty-three miles northwest of San Antonio. Ten miles above Bandera, on the river, is Moundville, a thriving village, located upon a beautiful prairie, the settlement of which was commenced about one year ago. The lands of the county are prairie, timbered over two-thirds of its area with live, Spanish, and post oaks, elm, cedar, walnut, cherry, sycamore, &c. The Medina and some of its larger tributaries are fringed with highland cypress, the manufacturing of which into lumber is quite a lucrative business. The soil of the valleys and some of the uplands is very dark in color, friable, and easily tilled, and is well adapted to the growth of cereals as well as cotton, tobacco, and various garden vegetables. The average yield of corn is thirty bushels per acre, and other crops yield a generous return for the slight labor and attention usually bestowed upon them. The price of unimproved arable land ranges from one to five dollars per acre. There are no marsh or swamp lands in this region, and probably no healthier climate known, fever and ague and epidemics being unknown. The Gulf breezes prevail during the warm months, giving a cool, pleasant temperature, and the small mountain and forest growths break the cold northers of winter. The Indians have at times committed depredations, but since the frontier troops of the State have been ranging around us we have been free from molestation. The population, which is nearly all white, is increasing by immigration and otherwise, and is peaceable and law-abiding. Stock-raising is the principal business, the ranges affording sustenance throughout the year to all classes of farm animals.

TRIALS OF SEEDS.

Mr. H. Bowen, of Orleans County, New York, writes as follows: "I herewith send you a sample of White Touzelle wheat, from imported seed, furnished by you to the New York State Agricultural Society in the fall of 1869, while holding the fair at Elmira. The whole amount, $1\frac{3}{4}$ bushel, was drilled after barley, at the rate of a little over two bushels to the acre. The season was very bad here, but the yield was sixteen bushels. I received it rather late in 1869, so that it was not sown until the 21st day of September. It is rather a short, fine straw, bald wheat, and, I think, it is well adapted to this climate, it being a little earlier than the Treadwell variety. I sowed fifteen bushels on the 1st day of September last. It is now looking well."

Seth S. Barnes, of Olenia, Illinois, writes that, "On the 20th of May last, I planted a peck of the Peerless potato. By dividing the eyes, I made 460 hills, but on account of the drought not more than 300 grew. These were planted on about $11\frac{2}{3}$ square rods. The land was very rich, and was worked to the depth of fifteen inches, and thoroughly pulverized. One handful of manure was used to the hill, composed of two-thirds hen-droppings and one-third leached ashes. The crop was worked three

times with hand-hoe, and was dug the middle of October. Yield 42½ bushels, or equal to 583 bushels per acre. Ground seeded at the rate of 31½ bushels per acre, with a failure of over one-third of the seed to grow. I have twenty potatoes which weigh between three and a half and four pounds. One, when dug, weighed over six pounds. These potatoes are solid to the center, cook up mealy, and of better quality than the Peach-blow, as the Peach-blow in this region grows hollow and the center of the potato does not cook well.

Columbia, S. C.—Some details relative to the lucerne seed obtained from the Department may not be without interest. I live in what, as compared with other lands in this vicinity, are called "sand hills," one and a half mile from Columbia, a place of resort for health. The soil of Columbia and much of the country is stiff red clay; but mine, light-gray lands, that soon wash to white sand, and require constant fertilizing to keep them up; also great care to prevent washing. In this soil I planted the lucerne, in my garden; one bed, broadcast, and allowed it to grow without cultivation; another bed I drilled, and had it occasionally worked. Both beds had been coated with barnyard manure, and sprinkled with the debris from a burnt building. The season was favorable to it, as we had plenteous rains. The broadcast bed has grown, and to-day is as green as you can imagine green to be, though it had been repeatedly cut down; and it has settled all doubts I ever had of our ability to raise crops of this sort. That which was drilled and worked surpassed all expectation. To give a more graphic idea of yield, my children have thirty-eight grown English rabbits, with many young ones, and these two beds have supplied them with green food. I am sure they, together, eat as much as a horse would eat, if not more; and I think it worth considering when two beds of 20 by 20 feet supply such a quantity. We are vastly troubled here with two injurious grasses—*wire* or *joint grass* and *nut grass*—of which we find it very difficult to give any Northern man a correct idea. To eradicate them is next to impossible; certainly so with the latter. It sends its nuts down for two or three feet sometimes, and deeper, according to the excellence of cultivation. The more work done, the more it spreads; and as soon as it is discovered the only way is to abandon the land for a term of years to broom-sedge, and allow it be smothered out. As they both die in winter, but come again in spring, I firmly believe that lucerne sown upon this land thickly, and well manured, would smother them out, and be highly profitable also.

LIVE STOCK IN MUSCATINE, IOWA.

Muscatine County, Iowa.—The raising of horses has been overdone in this county. We, as a farming class, have been crazy on the subject of speed, and are now reaping the fruits of our folly. Had we a number of years ago entered into the raising of horses for the farm instead of the turf, we would not have the comparatively worthless animals now on our hands—not fast enough to win or large enough to work. The majority of farmers are, however, again raising such horses as will always find ready sale. The Percheron is meeting with much favor. Mules are almost entirely neglected. Those wanting them, in most cases, go to the neighboring section of Illinois, where they are quite extensively raised. All kinds of cattle are receiving increased attention. For beef the short-horn takes the precedence, but for dairy purposes the Alderney and Jersey are especial favorites. We think the day is not far distant

when this will be one of the first dairy counties of the West. Sheep are neglected. All for sale, and no buyers.

If this county has any specialty it is the hog, and as the dairy interest increases this class of stock will improve. The ruling breeds are the Cheshire, Chester white, Poland and China, Berkshire, Suffolk, and English Chester. The white breeds are generally preferred. The average weight of hogs sold in this market is fully one hundred per cent. greater than it was fifteen or twenty years ago, and I am confident there is not as much corn consumed per capita as there was then—the result of improved stock.

LIVE STOCK IN HARRISON COUNTY, W. VA.

Harrison County, W. Va.—The following table shows the number of live stock in this county, as returned by the assessor in 1870, compared with the number returned in 1869:

Stock.	1869.	1870.	Average value in 1870.
Horses and mules	4, 731	5, 036	\$73 00
Cattle	16, 391	17, 857	28 00
Sheep	15, 376	12, 166	1 82
Hogs	1, 391	1, 332	5 93

THE SUGAR BEET IN MINNESOTA.

McLeod County, Min.—"I think the soil in this county very favorable for the production of sugar beets. Joseph Le Maitre, to whom I gave a portion of the seed received from the Agricultural Department, raised forty bushels of beets, two bushels of which he steamed, crushed, and pressed, by a rude process, and obtained six and a half quarts of molasses of the consistency and taste of ordinary sorghum syrup."

INJURY TO FRUIT TREES.

Tazewell County, Ill.—January 13 and 14, heavy storm of rain, sleet, and snow, which froze as it fell, covering fruit and forest trees with a very heavy coating of ice, which was followed the succeeding night with a heavy wind, making sad havoc with peach, cherry, plum, and all other brittle wood. Loss in this county estimated at \$500,000, which I think a very low estimate.

Henry County, Ky.—We have just got rid of one of the most extraordinary sleets known to the oldest inhabitant. Great damage was done by it both to fruit and forest trees; the peach trees have suffered most. In many localities the peach orchards have been almost entirely destroyed. For four or five days every branch and twig of every tree was thoroughly encased in ice. What effect it is to have upon the young buds is not yet known. We hope, however, that it will not be disastrous.

CHANGE OF CROPS.

Ottawa County, Mich.—Public sentiment is being changed in a radical manner as to farm products and stock. More pork, more beef,

more butter and cheese; and fewer sheep, fewer acres of wheat, and less hay to sell, are now the words in every farmer's mouth. With such a change, fruit prospects will not suffer, but will be all the better.

NEW COTTON AND WOOLEN FACTORY IN GEORGIA.

Brooks County, Ga.—A cotton and wool factory is being erected in this county, which will materially increase wool-growing. Planters are turning their attention more to hog-raising than at any time since the war. Brooks County is more prosperous than any other section of Southern Georgia.

THE DAIRY IN MEDINA COUNTY, OHIO.

Medina County, Ohio.—Our farmers are disposing of their sheep and increasing the number of their cows. I look upon dairying as injurious to our best interests. During the last decade fifteen out of seventeen townships in our county have decreased in population, and the greatest decrease is in the townships most devoted to dairying.

SHEEP AND SWINE.

Fayette County, Pa.—The business of wool-growing has run down very much within the last four years; formerly Fayette and Washington counties were among the foremost in the country in wool-growing, but the foot-rot has prevailed very extensively for several years, and many who were formerly largely engaged in the business have now entirely abandoned it.

Warren County, Ind.—Owing to our large corn crop last year, farmers have gone largely into the breeding of swine, and mostly from the best stock that can be had. A failure of the corn crop this year would have a tendency to decrease the number. Every species of live stock is on the decline as to market value. Sheep are running out fast. They are not cared for, and the dogs have full liberty to devour whole flocks without much complaint of the owners. I think dogs the greatest nuisance that we have.

Caledonia County, Vt.—There has been a very general disposition among farmers to get rid of sheep, particularly the fine-wooled breeds, and to stock with cows. Those who keep sheep have got the coarser-wooled kind, relying more on the mutton than wool. Fine-wooled sheep have almost disappeared among us.

Owen County, Ind.—The destruction of sheep by dogs, together with the low price of wool, have lessened the interest in sheep husbandry. To these causes may also be added the fact that mutton sheep were sought for during the past year on account of the high price of beef and other meats. There is a growing sentiment in favor of the larger long-wooled varieties, and if dogs could be banished, our county would be one of the best for sheep. The enormous increase in the number of hogs over last year is attributable alike to the surplus corn and the remunerative price. Thousands of pigs were saved in "feed lots" this year, that were usually knocked in the head as soon as "piggied." These now sell for \$2 to \$4 each.

Chariton County, Mo.—Sheep are on the decrease on account of the low price of wool and a tendency to disease in large flocks in small pastures. Hogs are on the increase, and a great improvement is being made in breeds by importation from other States.

DISEASES OF STOCK.

Anne Arundel County, Md.—A singular disease resembling “blind staggers” has attacked quite a number of horses during the past month. Every case has proved fatal in from two to four hours.

Cobb County, Ga.—The “blind staggers” has prevailed to some extent, proving fatal in every instance. The disease has been known in this county since the first settlement, and is supposed to be caused by eating corn not fully matured. No remedy known.

Upshur County, Texas.—Horses have died with “blind staggers” during the fall and winter.

Williamson County, Texas.—At least twenty-five per cent. of the one and two-year-old colts have died of distemper within the last two years.

Monroe County, Tenn.—Quite a number of horses have died of “blind staggers” during the past few months.

Texas County, Mo.—At least twenty horses have died in this vicinity lately, of “blind staggers,” supposed to result from eating wormy corn, of which there is a large quantity in the county, owing, I suppose, to the very dry summer and wet fall.

Augusta County, Va.—Some cattle have died from being kept in corn-fields, the stalks eaten being too dry and indigestible. Also some loss of calves from “black leg.”

Caldwell County, N. C.—A disease known as distemper prevails to some extent.

Worth County, Mo.—There have been many losses of cattle during the winter, ascribed to various causes. Some attribute the disease to smut on the corn. Post-mortem examinations made in many cases have shown the “manifold” to be perfectly dry, and the fodder eaten—mostly in stalk fields—to be clogged and so hard as to be almost impenetrable to a knife. Some farmers have lost fifteen to twenty head.

Lagrange County, Ind.—The fatality among cows and other cattle, caused by smut on corn-stalks, has been much greater than in any former year.

Osage County, Kansas.—A few young cattle have died, supposed to have been caused by eating smut on corn fodder.

Howard County, Md.—Hog cholera has been unusually prevalent, some farmers losing sixty head during the past year. The entire loss in the county has been about three thousand head.

Montgomery County, Md.—Large numbers of hogs have been swept off by cholera, and farmers are discouraged from purchasing stock hogs. Various remedies have been tried without avail.

Loudoun County, Va.—There has been a disease among the hogs in this county for the last few months by which some farmers have lost almost their entire stock.

Alexander County, N. C.—Fully one-third of the hogs of this county have died of a disease heretofore unknown in this section. Some die in a few hours, without any swelling. Others dwindle for weeks without eating, and become mere shadows. Some partially recover, but none seem to thrive after having once been attacked. The disease has not extended to many adjoining counties as yet.

Caldwell County, N. C.—Hog cholera still prevails to some extent, no effectual remedy having been discovered.

Stanly County, N. C.—The ravages of the cholera are rapidly thinning the stock of hogs. The disease is partially checked by administering sulphur or spirits of turpentine, as suggested in the agricultural reports.

Tallapoosa County, Ala.—There is slight complaint of hog cholera in the northern part of the county, but to no great extent.

Austin County, Texas.—Hog cholera prevails to some extent. An active purgative has proved very beneficial. Sweet milk and soft soap, given lukewarm, is recommended.

Sullivan County, Tenn.—Neither the cold weather nor any treatment has checked the hog cholera. It attacks all breeds alike. Some believe soft soap fed thrice a week to be a preventive, but the general experience has not proved it so.

Boyle County, Ky.—Hog cholera is proving very destructive. No known remedy.

Shelby County, Ky.—A large number of fall pigs have died this winter from a disease resembling in some respects the cholera. The symptoms are a cough and gradual wasting away of the system. Half a pound of calomel to fifty shoats, stirred into shelled corn while damp from previous soaking, has been found an efficacious remedy.

Miami County, Ind.—Our hogs have been troubled with the cholera and a disease pronounced to be quinsy, proving fatal in forty-eight hours from the time of attack. Suds from common soft soap, and camphor, have proved the most availing remedies.

AID TO THE FARMERS OF FRANCE.

The following circular has been issued by the Commissioner of Agriculture, in coöperation with the relief committee of the New York Chamber of Commerce:

TO THE FARMERS OF THE COUNTRY.

The wants of the peasant-farmers of Northern and Central France, rendered imperative by the spoliations of war, appeal to the sympathies and benevolence of Americans, who can never forget the disinterested services of Frenchmen in our early struggles for national independence. The season of seed-time is approaching, and the supplies of seed to insure a harvest and avert a famine must, in a large measure, come from England, Belgium, and America. In this generous national rivalry it is to be hoped that this country will not be distanced.

The New York Chamber of Commerce offers to give free transportation to France, through its relief committee, to all grains and seeds contributed, and will pay freight charges to New York on any invoice exceeding one hundred bushels; but local donors should arrange with interior railroads for free transportation, if possible, to New York City.

The best local varieties of spring wheat of last year's crop, sound and clean, are especially desirable, yet winter wheat may be contributed where spring wheat is not attainable; the heaviest and most productive oats, as the Excelsior, Swedish, Surprise, and Norway; the most thrifty kinds of barley, and the most prolific varieties of bush-beans. Especial care should be exercised in avoiding seed injured by or containing insects, and grains foul with the germs of pestiferous weeds. The packages should be stout and well-fastened barrels, and the net weight should be plainly marked upon each package, the variety of seed or grain, and the State where grown.

These donations should be sent to the relief committee of the New York Chamber of Commerce, at 64 Pearl street, in season for shipment on the 15th of March, and it is hoped and believed that they will be both liberal and general.

HORACE CAPRON,
Commissioner.

NEW YORK AGRICULTURAL SOCIETY.

The annual meeting and winter exhibition of the New York Agricultural Society were held in Albany, February 8th and 9th. The attendance was larger than usual. Hon. B. F. Angel, one of the vice-presidents, presided, in the absence of the president, Solon D. Hungerford. The report of the executive committee was read by T. L. Harison, corresponding secretary. The report of the treasurer, Luther H. Tucker, showed the total receipts of the year to be \$24,308 67, of which \$20,309 72 was received through the Utica State fair, and the total disbursements \$22,133 48, leaving a balance, with the reserve from former years, of \$20,152 64. This substantial surplus has been obtained without recourse to the race-course.

The officers selected for the ensuing year are as follows :

President—Richard Church, of Allegany.

Vice-presidents—1st, Thomas H. Faile, Jr., of New York City; 2d, Edwin Thorne, of Dutchess; 3d, Jurian Winne, of Albany; 4th, Frank D. Curtis, of Saratoga; 5th, James Geddes, of Onondaga; 6th, William M. Ely, of Broome; 7th, Benjamin F. Angel, of Livingston; 8th, Horace S. Huntley, of Cattaraugus.

Corresponding secretary—Thomas L. Harison, of St. Lawrence.

Recording secretary—W. H. Bogart, of Cayuga.

Treasurer—Luther H. Tucker, of Albany.

Executive committee—Adin Thayer, jr., Rensselaer; Milo Ingalsbe, Washington; Fordham Morris, Westchester; Robert J. Swan, Geneva; Harris Lewis, Herkimer; George H. Brown, Dutchess; Joseph Juliand, Chenango; John L. Cole, Wayne.

Miss Middy Morgan, of the New York Times, was introduced by General M. R. Patrick, and read a paper upon the transportation of cattle, its inadequacy, cruelty, and wastefulness, and the neglect and brutality which characterized their treatment after arrival at the market. She also presented earnestly the subject of reformatory schools for vagrant children of both sexes, under the direction of the New York Agricultural Society, in which the boys may be taught practical agriculture, and the girls may be trained to household arts. This important subject was effectively presented, and its spirit and aims were heartily indorsed by the society. It is to be hoped that State aid may be obtained for such an institution.

On motion of Vice-President F. D. Curtis, a resolution was adopted approving the existing law for the prevention of cruelty to animals.

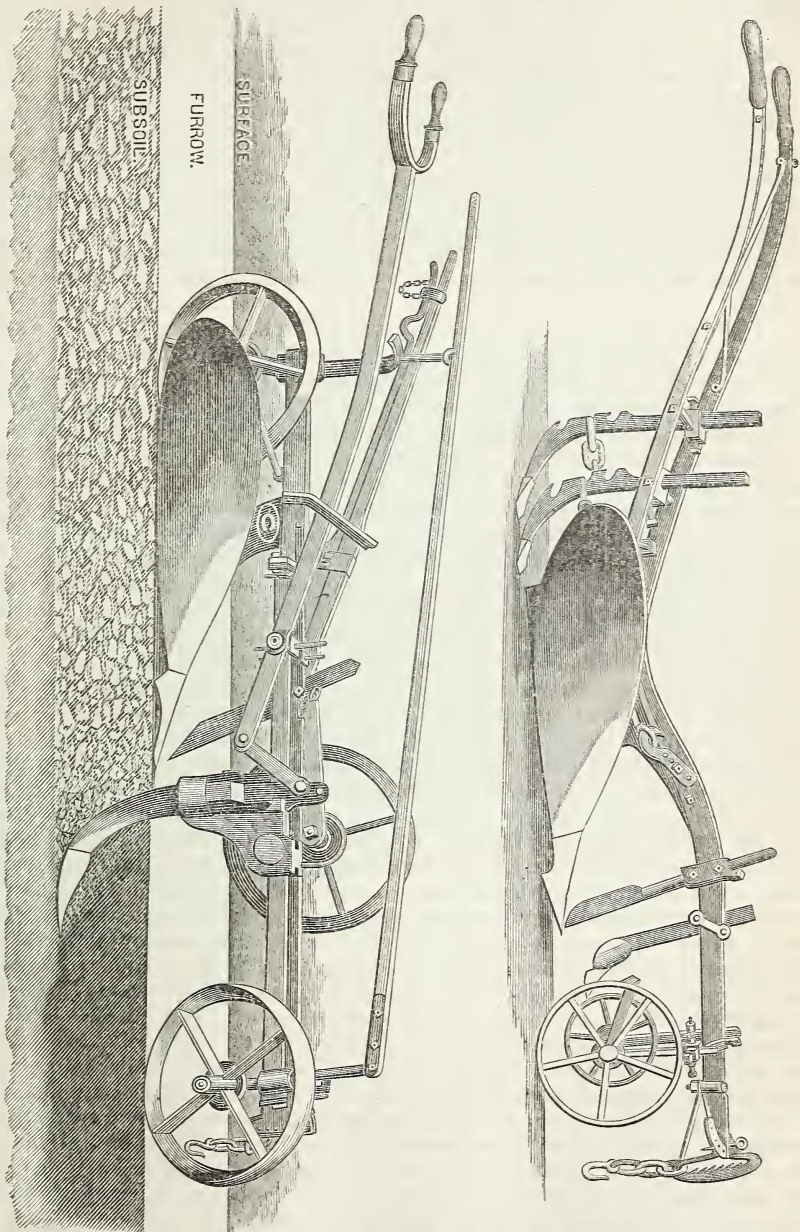
The evening of the 8th was occupied by addresses, in the assembly chamber of the State-house, on wool and mutton in America, by J. R. Dodge, of the Department of Agriculture, and on stock-breeding, by Prof. James Law, of Cornell University. The former explained the causes of depression in wool-growing, giving condensed statistical statements of consumption and production, and showed where and how lamb-raising, mutton-producing, and wool-growing yield relatively the largest profits. The latter made a lucid presentation of the principles which underlie successful breeding of farm stock, illustrated by instructive diagrams.

On Wednesday a report on needed reforms of the market system, by Joseph B. Lyman, of the New York Tribune, was read by Vice-President F. D. Curtis, who also read a paper of his own on the conveniences and adornments of country homes.

The winter exhibition at the rooms of the secretary was an interesting show of well-kept fruits and vegetables.

BRITISH IMPROVEMENTS IN PLOWS.

For the purpose of comparison with American improvements, and to give the general reader an idea of the style of popular foreign plows, engravings and descriptions of two recent British inventions are here-with given.



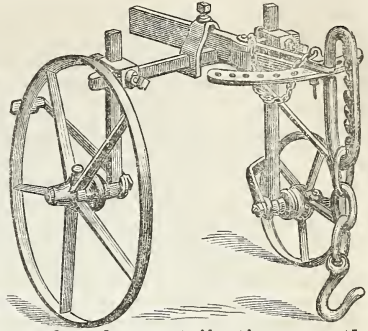
The double-furrow plow (of G. W. Murray & Co.) is intended for turning one furrow-slice, with a subsoiler in front for loosening the sub-

soil in the bottom of the furrows behind the furrow-horse. The Gardeners' Chronicle says of it:

This is a much more effective plan of subsoiling than the old one, as the furrow-slice is turned over the newly loosened subsoil, thus leaving the land in the best possible state for aeration and drainage, with the fertilizing processes that follow. When the work was done on the old plan, either with two teams—one in the subsoil plow and the other a common plow—the furrow-horse of the latter team, trod and consolidated the newly loosened subsoil. Even the feet of the plowman holding the subsoil plow did much harm to land naturally adapted to run together in the bottom, and besides better work done, there is a great economy of horse-power, fully as much as when turning two furrow-slices. By removing the subsoiler, and fixing abreast, the implement is converted into a furrow-plow. At the Oxford meeting of the Royal Agricultural Society this combination of plow and subsoiler received the highest commendation of the judges. Whether used in this combined form or as a double-furrow plow, the implement is remarkably light in draught, thus proving that it is constructed on sound principles. The simplicity of the mechanism and plainness of the illustration render a detailed description unnecessary. The lever on the left hand regulates the depth of the furrow-slice, and throws the implement out at the head-land, by means of the land-wheel. The long lever to the leading furrow-wheel is for steering, and the two handles form a third lever for adjusting the depth of the subsoiler.

The upper figure represents the Messrs. Ransome, Sims & Head's first prize plow at the Newcastle and Leicester meetings of the Royal Agricultural Society, furnished with grubbers—the invention of Mr. Robinson, a practical Middlesex farmer. "For deep plowing these plows were never beaten, and as deep plowing is now the order of the day, and shallow plowing the exception, the implement may justly be termed 'the champion plow of England.' It would take a very elaborate series of mathematical drawings to show how this plow turns the deep-furrow slice and lays it in the manner it does, leaving a clear open furrow for the next turn. We here allude to what the judges said in their report at Leicester, and perhaps we should not be thanked were we thus to lay open the grand secret in the manufacture. But be that as it may, the Smithfield Club show is not the time for the solution of such a question. But speaking generally, the wrought-iron beam, instead of being a single bar, is made double at the lower end, where it embraces the body or frame of the plow. By this construction the beam acquires a degree of stiffness sufficient to obviate vibration, while it at the same time admits of simpler fastenings for the coulter and steam coulter, thus further increasing stiffness. It is a well-known fact that any spring or vibration of the beam greatly increases draught. For a similar reason the handles are braced by diagonal stays. By this formation of the beam and handles, the greatest strength is obtained by the less weight of iron. The plow is fitted with a lever neck by which more or less pitch is given to the share. The two grubbers are not rigidly fixed, but have sufficient play to admit of their going laterally when they come in contact with a stone or any similar obstruction in the land, and to give them strength the other way, they have each a drag-chain fixed in the body. Their object is to break pan and gradually deepen the soil, and also to loosen the soil below in plowing in manure with a shallow furrow. For this latter purpose they are admirably adapted, for the manure laid thus upon a loosened and properly aerated soil is in the best possible state for thorough incorporation with the land; whereas the manure, when turned down into a hard or close bottom, is often more than half lost. The following figure is a front view of the wheels on a larger scale. The judges in their report of the Leicester trials of the Royal Agricultural Society of 1868, spoke in the highest terms of these wheels. They are constructed on the same principle as carriage wheels, the hubs being bored, and the axles turned and capped so as effectually to keep out dirt, and

they are easily oiled without the wheels being taken off. They are attached to the beam at each end of the cross-bar in a very simple and efficient manner, the cross bar being held in its place by a clasp. An adjustable socket, with a vertical and horizontal hole, is put on to each end of the cross-bar. The stalks of the land and furrow wheels are passed through the vertical hole, and the socket works horizontally on the cross-bar. The set-screws which hold the stalks in the sockets are very accessible, little time being occupied in altering either the width or depth. The hake is also furnished with a fine adjustment, so that the plow can be made to run perfectly true, thereby contributing greatly to reduce draught."



LETTER FROM THE BOTANIST.

The following has been received from Dr. C. C. Parry, botanist of the Department, now with the San Domingo Commission :

SAN DOMINGO CITY, *February 13, 1871.*

DEAR SIR: I have the honor to report that since arriving at this point I have been closely occupied in making observations and collections of matters of interest connected with the agriculture and natural resources of this district. As first fruits of our labors I send by the Tybee steamer, direct for New York, three boxes, two of which contain dried plants, (so marked ;) the larger one contains articles for the museum, including native fibers, cordage, commercial woods, and such articles of native produce as will bear transportation. The fiber called *Kamote* is the product of *Fourcroya Cabense*, and yields enormously. I hope to send some bulblets of this plant that may be grown in the green-house.

This is not the best fruit season, and most of the native fruits will not bear transportation, but at the last point we shall stop at I shall endeavor to secure some of them for modeling. All investigation tends to show the vast resources of this country, which are hardly touched through imperfect methods of culture and want of enterprise. Our collection of plants will, I think, number over five hundred species, and we hope to lay in a good stock of seeds and live plants before leaving. I have found Mr. Shumacher very friendly and obliging. I have visited him at his residence, two miles from town, on the sea beach—a delightful residence. He has the *Fourcroya Cabense* growing in his grounds, and is engaged in making experiments in producing the fiber from the green plant by machinery.

My assistant, Mr. Brummel has been away on an expedition into the country for twelve days; is expected this week. My associate, Mr. Wright, is also absent on an expedition across the country.

I cannot ascertain certainly what will be the movements of the commission, but I judge there will be no particular haste about returning. I shall try to improve all the opportunities that the different movements offer. There is no doubt a large section of the mountainous districts adapted to the growth of *cinchona*. The frequent rains and cool, misty atmosphere, and elevation above the sea, absence of frost, &c., supply all the conditions of successful culture. A fair topographical map would enable one to lay down this *cinchona* district with tolerable correctness.

The woods of the country are numerous and exceedingly valuable; will constitute one great item of the wealth of the country. I have found coffee growing wild by the roadsides. On all these points I hope to present some interesting data in my final report.

Respectfully, yours,

C. C. PARRY,
Botanist Agricultural Department.

Hon. H. CAPRON,
Commissioner of Agriculture.

JUTE IN THE UNITED STATES.

Reports of successful tests of jute culture in this country since its introduction through this Department have been published in previous issues. The following communication on the subject, under date of February 28, has been received from E. H. Derby, of Boston, whose interest in the subject is not of recent origin:

I read with much interest the letters from Louisiana and Texas, in your report for September, which apprises us that the seed which you sent there in May last has produced plants which rose to the height of ten or fifteen feet, (the height in India,) and ripened seed, although planted as late as June last.

It is obvious that the jute has been successfully introduced into the country, and flourishes in the moist bottom lands of the Southern States. I entertain no doubt that it will grow wherever the cane grows, on the moist soils of the South, and I believe that the India plant is best suited to our requirements. One of your correspondents says he made no effort to gather the fiber.

The process of separating the fiber from the stem is thus described in the Atlantic Magazine for August, 1861, in an article in which I published some extracts from the Journal of Agriculture for India. The plants are first placed for a week in standing water; then the native operator, standing up to his middle in water, takes as many of the sticks in his hands as he can grasp, and removing a small portion of the bark from the end next the roots, and grasping them together, he with a little management strips off the whole from end to end, without breaking either stem or fiber. He then, swinging the bark around his head, dashes it repeatedly against the surface of the water, drawing it towards him, to wash off the impurities. The filaments are then hung up to dry in the sun, often in lengths of twelve feet, and when dried the jute is ready for the market."

I trust you will urge your correspondents to preserve and circulate the seed which they have raised, and to plant it when they plant the cotton. If the Department of Agriculture had done nothing else, it seems to me it has earned all the Government has appropriated for it by introducing and acclimating this valuable plant.

I deem it almost as great an acquisition to the country as cotton itself. It yields one of the cheapest fibers nature produces. It is raised in India, and I presume can be raised here for less than one-half the cost of hemp, and for one-fourth the cost of cotton. It has been produced in India for one cent per pound of fiber. It is woven not only into gunny-cloth and gunny-bags, but enters largely into carpets and many kinds of tissues. In India jute has been constantly gaining upon cotton.

England has imported from India of this article more than 120,000,000 pounds in a single year; and we last year imported more than 19,000,000, which cost more than \$3,000,000, and sold at the South for \$5,000,000. It is used there chiefly to envelop cotton. If we had diverted that amount of labor from cotton to jute we might have raised a much larger quantity at home, and at the same time have increased the value of our cotton crop.

The jute seems to me to be a plant admirably adapted to the wants of the South. The South requires it for bale cloths, also to divert labor from cotton, and to employ the operatives during inclement seasons in the manufacture of cloth.

I presume that the mechanism used in Kentucky for spinning and weaving hemp will be appropriate for jute. In India the widow still sits on the ash-heap and weaves her sackcloth.

I hope the Government will allow your Department ample funds to purchase some of the simple machinery required for this manufacture, and that you will induce some southern planters to continue the cultivation of it until its great value is generally appreciated.

This year demonstrates conclusively that a crop of 3,000,000 bales of cotton yields more than one of 4,000,000. Let jute be the substitute for the last million.

SCIENTIFIC NOTES.

PETROLEUM IN DRY ROT.

According to Herbst, petroleum may be applied with excellent advantage in the extirpation of the dry rot, it being only necessary to paint the surface of wood thus affected with the petroleum. A solution of carbolic acid, however, answers the same purpose and involves much less danger from fire.

HARD CEMENT.

A cement which becomes excessively hard in time may be prepared by mixing 2 parts of silica, 1 part of silicate of alumina, and 9 or 10 parts of carbonate of lime, all in powder, and then roasting in a puddling furnace. The remaining mass is then to be ground and again roasted with 2 or 3 parts of carbonate of baryta. In practice, very pure sand will answer for the silica and chalk for the carbonate of lime, the remaining ingredient being supplied by mineral witherite or natural carbonate of baryta.

CHLORALUM.

The new antiseptic commended by Professor Gamgee, and known as chloralum bids fair to be of much value in its applications in domestic economy and in medicine. The advantages claimed are the possession of antiseptic qualities equal to those of any other substance; while used in moderation it is entirely free from smell, from unpleasant fumes, has no disagreeable taste, and is without any irritant or poisoning qualities. According to Professor Gamgee, by its use as an antiseptic, raw-hide, meat, and other animal substances, immersed in a solution of 1.030 to 1.040, specific gravity, will be preserved perfectly for an indefinite period of time, and what is still more to the purpose, will not be attacked by insects after being removed from the solution. Fish, slightly tainted, when immersed recovers its freshness of appearance and becomes firm and palatable. In some instances fresh fish, such as salmon, when caught were dipped in the solution, and after a passage of several days, without ice, to London, in the summer season, were found to be entirely eatable. This substance is suggested as an aid in drying cod on the coast of Newfoundland and elsewhere, as thereby an immense mass of fish that are now rejected could be readily preserved. The offal of cod and mackerel fisheries which is now thrown overboard, could be preserved by this substance as long as might be required, and then carried on shore to be converted into one or other of the various forms of fish guano.

For disinfecting purposes a solution varying from 1.006 to 1.010 is sufficiently strong to answer the desired object, stronger solutions being usually unnecessary and imparting a disagreeable smell. The solid matter of sewage is said to be precipitated more rapidly by this substance than by the use of the persalt of iron, and the odor disappears entirely. The use of chloralum in any epidemic, the cattle plague or other contagious disease, including the epizootics, is indicated by the author of the communication. Finally, it is recommended for the treatment of wounds, erysipelas, gangrene, and various contagious and inflammatory diseases. It may also be used for the purpose of immersing the linen of patients before removing it from the sick chamber. For the purification of water-closets it is said to have no equal in any of the preparations hitherto recommended, and has also the advantage over nearly all the rest of being free from any offensive odor.

SOURCE OF MINERAL PHOSPHATES.

The source of phosphatic manures, such as are found in the mineral form in various deposits, is a subject that has attracted much attention on the part of chemists and agriculturists. Of course, as regards guano, the phosphoric acid is readily referable to the excrement and offal of sea-fowl. Certain guano, such as Sombraerite, is derived from the action of water on this matter, and the subjacent calcareous coral rocks. It is thought that much of the palæozoic phosphatic rocks may have been produced in this way; at any rate, those which have been formed subsequent to the evolution of terrestrial and vertebrate animals. There are, however, many beds the origin of which cannot be referred to any of the causes just mentioned. Professor Dyer, in an article on this subject in "Nature," suggests the same view that was presented at the late meeting of the American Association by Professor Kerr, namely, that the brachiopods may have supplied a large percentage, the recent *Lingula*, as is well known, having over eighty per cent. of phosphate of lime in the mineral ingredient of its shell. In fact, he is of the opinion that the large quantities of phosphate of lime in the Laurentian and Silurian, as well as in the Devonian and carboniferous strata, are derived from this source. In the mesozoic and tertiary strata, instead of finding the mineral phosphate in veins and beds, it occurs mostly in the form of nodules. Mr. Dyer coincides with the hypothesis previously presented by Mr. Lankester, based upon the property possessed by clay of detaching phosphate of lime from its solution in carbonated water. The nodules in question are believed to be bits of clay, which have been imbedded with great quantities of bones, as perhaps, also, with seaweed, from which, by the intervention of gas-charged water, they have extracted the phosphate. Hence the almost invariable occurrence of beds of phosphatic nodules near argillaceous strata.

This same view has been used to explain the origin of the phosphatic nodule beds which have lately been detected in immense extent in the vicinity of the city of Charleston, forming a mineral fertilizer which is coming into very extended use. Among other applications, this substance is ground up and mixed with prepared fish, and converted into an excellent manure for worn-out lands.

UTILIZATION OF COTTON SEED.

Various movements have been made of late years looking toward the utilization of cotton seed, usually considered a burden to the cotton-planter, and in getting rid of which great ingenuity has been expended. Among the more recent propositions of the kind, that of the employment of the adhering cotton, and, perhaps, of the woody material, in the manufacture of paper, has been brought forward, and a calculation presented as to the number of tons of paper stock that could thus be introduced into the market. Lately, large establishments have been started in the South for the purpose of obtaining the oil from the seed, the refuse being converted into oil-cake for fattening cattle. The crude oil brings in New York from thirty-five to forty cents a gallon, and the oil-cake commands nearly the price of corn, being said to equal it in its fattening qualities. Shipments of the seeds have been made recently in great quantity to Liverpool, from New Orleans, one vessel taking over ten thousand sacks of the seeds, and about one thousand sacks of oil-cake; and it is expected that these shipments will be followed up on a large scale. As over two million tons of cotton seed are every year produced in the South, we may well imagine how important it will be

to our country should the whole of this now nearly waste substance be utilized in some form.

The comparative value of winter refined cotton seed oil, and of olive oil may be gathered from the fact that at the latest dates the former is quoted in the New York prices current at 72 cents per gallon, while the latter with duty off brings only \$1 in gold.

POTATO FLOUR.

Few persons in the United States are aware of the demand for farina, or potato flour, and of the almost unlimited extent of the market that can be found for this product, which is simply the dry, evaporated pulp of the ordinary potato, the whiter and more free from black specks the better. It is used for sizing and other manufacturing purposes, and with the aid of precipitation and acid is converted into starch. In Europe it meets a large and increasing demand, in its primitive state, as potato flour; and in Lancashire alone 20,000 tons are annually sold, and as many more would be taken if put into the market. When calcined it is used largely for silk-dressing and other purposes.

At this time the quotation for potato farina in Liverpool is a little over 4 cents a pound, while wheat flour is about $2\frac{1}{6}$ cents a pound; so that the potato flour is worth nearly double that of the wheat at the present rate. Consignments to Liverpool are solicited by the brokers there, who promise to take all that can be furnished.

REMOVAL OF WALNUT STAINS FROM THE HANDS.

Those of our young friends who have occasion to gather walnuts may be interested to have a hint as to the best method of removing the stains produced in hulling them. This may be accomplished simply by rubbing with slices of apple or of pear; the cleansing power being due, it is supposed, to the presence of the acid, which, therefore, may perhaps be advantageously replaced by citric acid or lemon juice. If, however, the stains be at once thoroughly washed in fresh water, without using soap, they may be made to disappear almost entirely; but soap is inadvisable, since its alkali acts as a mordant and fixes the color.

PREPARED MEAT-EXTRACTS IN JAVA.

It has frequently been remarked that the best inventions of the western nations have, in nearly every instance, been anticipated by processes long since devised and in use by the Orientals, especially by the natives of China and Japan; and we are assured that the subject of prepared meat-extracts takes its place in this category. We are informed by a recent communication of Dr. Pott that the inhabitants of Java have for many years been in the habit of preparing flesh extracts of various kinds, and especially of beef, fish, and crabs, and that in this form they enter very largely into the internal commerce of the country. The preparation is known by the general name of *petis*, while the particular substance, whether the flesh of one of three kinds of oxen, of fish, or of crabs, is indicated by a special affix.

The preparation of the *petis* appears to be a very simple one, consisting merely in boiling the raw material and chopping it very fine, and then putting it in a press and forcing out all the juices. This juice is then boiled down at a moderate temperature to the consistency of sirup, and kept for use. As a general rule, the preparation is made of such

pieces of meat of all the animals used as when brought to market are not sold before its close, a precaution rendered necessary by the heat of the country, and the impossibility of obtaining ice, by means of which to carry the food over until the next day. The substance from which the petis is expressed is also dried and introduced into commerce, but is generally used immediately, while the petis is distributed widely throughout the Indian Archipelago, and can be kept a long time. These preparations have an extremely saline taste, due almost entirely, however, to the concentration of the organic salts originally contained in the expressed juice. The smell is said to be quite agreeable, and the taste very appetizing.

VARYING EFFECTS OF POISONS ON DIFFERENT ANIMALS.

It is a well-known fact that what is poisonous to one animal may be taken by another with entire impunity. In illustration of this proposition, we are informed that strychnine, so fatal to most animals, may be eaten by certain species of monkeys with perfect safety. In the case of an East India monkey, known as the Lungoor, (*Presbytis entellus*,) one grain was first concealed in a piece of cucumber, which was eaten by the animal with no apparent effect. Three grains were afterward given, and with the same result. To test the strychnine used, three grains were administered to a dog, which proved almost immediately fatal. Another Indian monkey, known as the pouch cheek monkey, has been found to be more susceptible than the Lungoor, but not so much so as the dog.

It is also stated that pigeons can take opium in large quantities with no injurious consequence; goats, tobacco; and rabbits, belladonna, stramonium, and hyoseyamus.

VICTORIA STONE.

In a communication upon artificial stone made to the British Association by the Rev. Mr. Highton, the well-known fact was adverted to, that certain forms of natural silica occurring in various parts of Europe, especially in England and Germany, can be dissolved, under proper precautions, even when cold. An important application has been made of this soluble silica in the preparation of an artificial stone, which is harder than any natural stone, except the hard granites and primitive rocks. The process indicated for utilizing this consists in first making a concrete of any good hydraulic cement. When this is dry it is steeped in an alkaline solution of silica, in which is placed a quantity of free silica. The following chemical process then takes place: The lime in the concrete extracts the silica from the solution, leaving the alkali free, which immediately attacks the free silica and conveys it in its turn to the concrete. This process goes on continually till the lime in the concrete is saturated with silica. In this way, within a week, the strength of the concrete is increased from 50 to 150 per cent., and to a still greater degree by a longer immersion. As the alkali acts only as a carrier of the silica, it is used over and over again, and it is in this that the economy of the manufacture consists. The substance thus formed is known as silicated concrete, or the patent Victoria stone, and it has been manufactured on a grand scale in London, and several large edifices have been built entirely from it. The economy of its construction is such that it promises to supersede natural stone, except where the latter is very cheap and abundant. In London it can be put into place in building at a much less cost than natural stone.

ARTIFICIAL ICE IN PACKING FISH.

As might have been expected, the artificial ice machines have been extensively called into play for the manufacture of ice to be used in packing fish. In corroboration of previous statements, it is said to be far more durable than natural ice, the crystals being much more solid and exhibiting less tendency to split into flakes. The estimate has been made that thirty per cent. less of artificial than of natural ice will secure the same preservative effect. One objection to some forms of artificial ice is said to be the opacity of its color; but an inventor announces his discovery of a method by which perfectly transparent ice can be obtained, and for its publication to the world he asks the modest sum of five hundred pounds sterling.

CINCHONA IN JAVA.

According to Professor Hasskarl, the cultivation of cinchona in Java continues to be a success, the weather having been favorable and the growth of the plant perfectly satisfactory. The number of plants obtained from seeds and layers was about one and a half million, principally of the species *C. calisaya*; eight hundred and seventy thousand were transplanted in addition, and over one thousand pounds of the dry bark were sent to Holland in 1869, bringing from thirty-six to fifty-four cents per pound. The total product of 1870 is estimated at eight thousand eight hundred pounds for exportation, besides some hundreds for home use in the island.

EARLY VEGETABLES.

According to "*Nature*," Professor Decaisne has brought to the notice of the Academy of Sciences in Paris a scheme for the rapid growing of cabbages, radishes, &c., which are to be sown in richly manured soil, and then used, stem, root, and all, as fresh vegetables. This diet is intended to protect the inhabitants of Paris against the scurvy, which may be expected to make its appearance in time in consequence of the necessity of using salted meats.

ANALYSIS OF THE ASH OF THE POTATO.

A careful analysis has lately been made, by Dr. Schoras, of the ash resulting from the burning of potatoes, this amounting to from three to four per cent. of the dried potato. According to this chemist, the proportion of potash amounts to over fifty per cent., forty-five per cent. being the smallest quantity observed. Of soda, there is generally from two to three per cent.; in most cases only one per cent. being appreciable. Next to the potash, magnesia enters as the principal constituent among the bases; nevertheless amounting to only the tenth part of the proportion of potash. Lime is a subordinate element, in most cases scarcely equaling half the amount of magnesia. The percentage of potash was found to increase or diminish, as the yield of the crop was greater or less; but of the other bases little difference was found in this respect. It was also observed that the percentage of phosphoric acid increased as that of potash diminished; so that in the abundant harvests it is proportionally less than in the scanty ones, varying from ten to nearly eighteen per cent. The proportion of sulphuric acid is tolerably constant, varying from five to six per cent. The percentage

of chlorine varied very much; namely, from two to nearly eight per cent. The quantitative difference in the percentage of chlorine in the ashes was found throughout to have a direct relationship to the amount of the crop itself. Should this inference, which the author now presents as provisional only, be substantiated by the further experiments he proposes to make, it may be considered that the combinations of chlorine have the same significance in the cultivation of the potato, that gypsum has to various other cultivated plants.

IMPROVEMENT OF THE BREED OF CATTLE.

According to Prof. Schmied, a permanent improvement of the breed of cattle is inseparably connected with the following proposition, namely: that calves must be nourished with a sufficient quantity of their mother's milk for a much longer period than has hitherto been the custom; all other methods having reference to this same object being insufficient without a proper adherence to this fundamental consideration.

GRINDING FODDER FOR DOMESTIC ANIMALS.

The practice of grinding or crushing hay and straw, instead of the usual method of chopping it, as an article of food for domestic animals, is coming very much into favor. The digestibility of these substances, as is well known, is much increased by steaming and softening with water; but a very marked improvement in the condition of cattle, it is said, is speedily observed in consequence of the adoption of the process referred to. It is maintained, also, that horses fed with ground hay are much less liable to suffer from attacks of colic than when the food is chopped, and that an appreciably smaller quantity will supply sufficient nutriment, less passing off in the form of undigested fiber. The operation of grinding is effected by means of millstones, or any other conveniently-adapted arrangement, a very soft article of food being produced, which is extremely acceptable to the cattle.

PRESERVATION OF BEER.

The method of preserving wine devised by Pasteur, which consists in heating it after having been bottled or put up in casks, to a temperature sufficient to destroy the vitality of any existing spores of the wine fungus, and thereby to prevent their development, marked a new era in the business of wine-making, the treatment recommended having been followed with great success, and coming more and more into use. Quite recently the same principle has been made use of in regard to beer, which is still more liable than wine to become sour. In this case, too, the success has been complete, and immense quantities of malt liquors of various kinds, after having been subjected to the process, are now shipped from Germany to all parts of the world. The bottles, after being filled and well corked, are kept for about half an hour in a water-bath having a temperature of 122° Fahrenheit, after which the warm water is gradually replaced by cold, so as to prevent too rapid cooling. In one of the experiments instituted for determining the feasibility of the operation, four bottles of the same kind of beer were well corked, and two of them were submitted to the process in question, after which all were introduced into a heated room in the vicinity of a stove, and kept at a temperature of between 70° and 80° for four weeks. At the end of this time the prepared beer was found to be perfectly clear and

of a golden tint, with only a slight deposit of granular matter at the bottom. The unprepared beer, however, was found to have passed into an active state of fermentation, turning completely sour, and one of the bottles had burst in consequence. It is requisite, however, in preparing beer by this method, that the corks be perfectly tight, and for this purpose the best champagne corks must be selected, and, if possible, soaked in a hot solution of paraffine and some resin, (as colophony,) a composition which melts only at a temperature of 120°. In this way the entire percentage of carbonic acid of the beer will be retained in the bottle, and the beer will be found capable of preservation for an indefinite period of time. It is said that beer of any quality can be kept in this way, the lightest and weakest being as susceptible of preservation as any other.

IMPROVED BIRD-LIME.

By adding a concentrated solution of chloride of lime to a strong solution of common glue, a mixture will be produced which does not dry up, and can be easily dissolved by the addition of water. Thus prepared, it is recommended as a bird-lime, replacing advantageously the article usually made out of holly-bark or other substances.

ITEMS FROM VARIOUS SOURCES.

A NEW INDUSTRY.—The sweet potato, used in various forms as an esculent, in making bread, as a substitute for coffee, in the brewing of beer, as well as for fattening farm animals, is now beginning to be used in making a sirup “far surpassing that of the beet and even of the sorghum in delicacy of flavor, while the yield is much more abundant. The average product of a bushel of sweet potatoes—the yam variety being preferred—is alleged to be over two gallons, and as the average yield per acre, on poor, sandy soil, is from 150 to 180 bushels, the product must necessarily be from 300 to 350 gallons of sirup. This must open to the view of the piney-woods agriculturist a new and most profitable industry, one man, with a mule, being able to cultivate at least fifteen acres in potatoes. The residuum, after the juice for sirup has been extracted, is pronounced a valuable edible either for man or beast.”

PROTECTION AGAINST THE CABBAGE-WORM.—The European cabbage-worm, *Pieris rapæ*, recently introduced by way of Canada, which has proved so voracious and prolific, has become the terror of northern cabbage-growers, and threatens to traverse the country, unless checked by natural or other causes. Wherever the pest has reached, so far as heard from, very few if any remedies have availed to give relief to the gardener. The most noted success is that of P. T. Quinn, the market-garden reporter of the New York Tribune. He sends to us the following statement: On his return from California, last summer, he found his cabbages infested with worms, and threatened with total destruction. He went to work with his accustomed energy, experimenting, trying everything new and old promising riddance of the plague, all to no purpose, until he hit upon the following: 20 parts of superphosphate made of slush acid, 1 of carbolic powder, and 3 of unslacked lime, mixed well together and dusted thoroughly into each head four times at intervals of four days. The result was the saving of 75,000 cabbages, and a loss of but five per cent. The worms would eat fresh lime with impunity, and carbolic powder would destroy cabbages and worms alike, but the ingredi-

ents in the proportion named, with the unsavory perfume of the superphosphate, either sickened or disgusted his swarming enemies.

FREIGHTS TO CHINA AND JAPAN.—The through freight from China or Japan, to either St. Louis, Chicago, or New York, is \$5 in gold, equal to \$5 55 currency, per 100 pounds; from China or Japan to San Francisco, \$2 gold or \$2 22 currency; from San Francisco by rail to either St. Louis, Chicago, or New York, \$3 gold or \$3 33 currency (currency figures being based on the present price of gold). The freight from China and Japan by sail is \$1 75 to \$2, gold, per 100 pounds; at an average say \$1 88 gold, equal to \$2 currency; add to this for difference in time, insurance, &c., say 17 cents per 100 pounds; add to this the present high rate of freight by rail from New York to Chicago, \$1 60 per 100 pounds, and we have a total of \$3 85 per 100 pounds; showing a difference of \$1 70 per 100 pounds in favor of New York. Freights by steamer and railroad, from China or Japan to Chicago, are calculated on the gross weight, while freights by rail to New York are calculated upon net weight, and inasmuch as the tare of Oolongs and Japans will average 25 per cent. of the gross weight, and greens 22 per cent. at rates as above, the freights by steamer and railroad, Oolongs and Japans would be \$6 93 per net 100 pounds, and on greens would be \$6 77 per 100 pounds; thus showing a further percentage in favor of New York that will average \$1 30 per 100 pounds, or \$3 per 100 pounds in all.—*American Grocer*.

THE GUAVA IN CALIFORNIA.—The San Francisco Bulletin states that William Patterson, a nurseryman living near that city, four years ago planted a guava, of the strawberry variety, imported from Australia, and recently removed it to his branch nursery. Only once during the four years has the tree failed to perfect a crop. It is now loaded with excellent fruit in every stage of ripening. This experiment seems decisive of the fact that the guava can be cultivated in the open air on the Pacific slope. Guava jelly is a well known article of commerce and brings high prices in the market. Another valuable element of agricultural industry is here indicated.

TEA CULTURE IN INDIA.—The Agricultural Gazette (Indian) states that there are in Assam 290 tea plantations, embracing 29,350 acres, and producing 435,772 pounds of tea last year. The crop of 1869 in Darjeeling amounted to 851,549 pounds from 44 tea gardens, of 10,067 acres. The crop of Sylhet was 239,909 pounds from 22 tea gardens, having 2,240 acres. In Cachar 118 plantations, with 24,374 acres, produced 4,009,835 pounds. The other tea districts—Dacca, Chittagong, Hagerbagh, and Lohardugah—contain but few gardens, and have failed to send proper statistics. In Sylhet and Darjeeling there were but few imported coolies, but in Assam there were 21,667. Cachar had 14,076 men under contract, and 15,000 whose time had expired. About 200,000 rupees were sent to Cachar during the year. Calcutta, during 1869, exported 11,434,000 pounds of tea—an increase of 2,664,651 over the previous year.

IMPROVED STOCK IN INDIANA.—Our Sullivan County (Indiana) correspondent states that much attention is being given in that county to the improvement of farm stock, several gentlemen of means having turned their attention in this direction. Mr. John Giles, of Sugar Tree Grove Farm, near Sullivan, has stocked his farm of six hundred acres with superior breeds of cattle, horses, and hogs, including a fine herd of short-horns, the pedigree of twelve of which our correspondent sends us.

MARKET PRICES FOR FARM PRODUCTS.*

Articles.	February.	
NEW YORK.		
Flour—State	per barrel..	\$6 20 to \$7 30
Western	per do....	6 20 to 8 75
Wheat—No. 1 spring	per bushel..	1 55 to 1 57
No. 2 spring	per do....	1 49 to —
Winter, and amber western	per do....	1 59 to 1 60
Corn—New western mixed	per do....	88 to 90
Old western mixed	per do....	90 to 91
Rye	per do....	1 13½ to —
Barley	per do....	1 10 to —
Oats—Western mixed	per do....	63½ to 65
State	per do....	60 to 61½
Hay—Shipping qualities	per ton	25 00 to —
Prime	per do....	25 00 to 28 00
Pork—Mess	per barrel..	21 75 to 23 00
Prime mess	per do....	21 50 to 22 00
Beef—Mess	per do....	10 00 to 15 00
Extra	per do....	15 00 to 17 50
Lard	per pound..	12 to 13½
Butter—Western	per do....	12 to 22
State	per do....	20 to 45
Cheese—Dairy	per do....	7 to 14
Factory	per do....	13 to 15¾
Cotton—Ordinary	per do....	13¼ to 15¼
Middling	per do....	15 to 17½
Tobacco—Sound lugs, light grades	per do....	7 to 7½
Sound lugs, heavy grades	per do....	7½ to 8¼
Common leaf, light grades	per do....	7¾ to 8½
Common leaf, heavy grades	per do....	8½ to 9
Wool—Combing fleece	per do....	43 to 55
Extra pulled	per do....	38 to 45
Texas, common to medium	per do....	23 to 30
California common	per do....	20 to 28
CHICAGO.		
Flour—Winter extras	per barrel..	5 50 to 8 00
Spring	per do....	5 25 to 7 00
Wheat—No. 1 spring	per bushel..	1 27¼ to 1 32
No. 2 spring	per do....	1 23¾ to 1 32
No. 3 spring	per do....	1 15 to 1 23
Corn—No. 2	per do....	49¾ to 54¾
Rejected	per do....	— to —
Oats—No. 2	per do....	46½ to 47
Rejected	per do....	44½ to —
Hay—Timothy and clover, (on track,)	per ton	— to —
Prime	per do....	— to —
Pork—Mess	per barrel..	22 37½ to 22 50
Prime mess	per do....	20 50 to 21 00
Beef—Mess	per do....	10 00 to 11 25
Extra mess	per do....	13 00 to 13 25
Lard	per do....	12¾ to 15½
Butter—Firkin and tub	per do....	10 to 13
Extra	per do....	22 to 28
Cheese—New York factory	per do....	15½ to 16½
Western factory	per do....	13 to 14
Western Reserve	per do....	13 to 14
Wool—Medium fleece	per do....	40 to 43
Unwashed medium	per do....	27 to 30
Tub	per do....	45 to 50

* Record made as near the first of the month as practicable.

Market prices for farm products—Continued.

Articles.	February.	
CINCINNATI.		
Flour—Family	per barrel..	\$6 00 to \$6 25
Extra	per do.....	5 25 to 5 50
Superfine	per do.....	5 00 to 5 25
Low grades	per do.....	4 50 to 5 00
Wheat—No. 1 white.....	per bushel..	1 40 to 1 43
No. 2 white.....	per do.....	_____ to _____
No. 1 red	per do.....	1 32 to 1 33
No. 2 red	per do.....	1 30 to _____
Corn—No. 1	per do.....	52 to 53
New ear.....	per do.....	53 to _____
Rye—No. 1	per do.....	1 05 to _____
No. 2.....	per do.....	1 00 to _____
Rejected	per do.....	_____ to _____
Barley—No. 1	per do.....	1 00 to 1 03
No. 1 State.....	per do.....	_____ to _____
Oats—No. 1 mixed	per do.....	48 to 50
No. 2 mixed	per do.....	46 to 48
Hay—tight pressed.....	per ton	18 00 to 21 00
Loose	per do.....	19 00 to 23 00
Pork—Mess.....	per barrel..	21 75 to 22 50
Prime mess.....	per do.....	_____ to _____
Lard—Prime steam.....	per pound..	12½ to 12½
Butter—Choice Ohio	per do.....	24 to 30
Fair to good	per do.....	18 to 21
Cheese—Western Reserve.....	per do.....	13½ to 14½
Factory	per do.....	14½ to 15½
Cotton—Ordinary.....	per do.....	10½ to 13½
Middling	per do.....	14 to 14½
Tobacco—Lugs, West Virginia.....	per do.....	4 to 8
Lugs, Kentucky.....	per do.....	7 to 10
Common to medium leaf, West Virginia.....	per do.....	8 to 9
Common to medium leaf, Kentucky.....	per do.....	10 to 15
Wool—Tub-washed	per do.....	48 to 50
Fleece-washed	per do.....	42 to 44
Unwashed	per do.....	30 to 31
Pulled.....	per do.....	36 to 38
ST. LOUIS.		
Flour—Superfine.....	per barrel..	5 40 to 5 50
Spring	per do.....	4 70 to 4 85
Choice	per do.....	6 00 to 8 50
Wheat—Spring	per bushel..	1 12½ to 1 30
Winter, No. 1	per do.....	_____ to _____
Winter, No. 2.....	per do.....	1 50 to _____
Winter, No. 3	per do.....	1 23 to 1 40
Red	per do.....	1 30 to 1 50
Corn—Mixed	per do.....	47 to 62
Yellow	per do.....	54 to 65
Rye	per do.....	85 to 95
Barley—Winter	per do.....	84 to 88
Spring	per do.....	40 to 75
Oats—Mixed	per do.....	42½ to 56
White	per do.....	53 to 60
Hay.....	per ton	14 00 to 20 00
Pork—Mess.....	per pound..	21 00 to 23 00
Lard—Tierce.....	per do.....	12¼ to 13
Keg	per do.....	13¾ to 14¼
Butter—Choice	per do.....	27 to 29
Fair to medium.....	per do.....	10 to 24
Cheese—Factory.....	per do.....	15½ to 24

Market prices for farm products—Continued.

Articles.	February.
St. Louis—Continued.	
Cotton—Middling.....per pound..	\$0 13 to \$0 14
Tobacco—Sound lug.....per do...	5 to 8½
Common leaf.....per do...	7½ to 8½
Medium leaf.....per do...	8½ to 9½
Wool—Tub-washed.....per do...	40 to 48
Fleece-washed.....per do...	30 to 41
Combing.....per do...	35 to 39
Pulled.....per do...	30 to 33
NEW ORLEANS.	
Flour—Superfine.....per barrel..	6 25 to 6 37½
Extras, (according to grade).....per do...	6 25 to 9 00
Corn—Mixed.....per bushel..	70 to 72
Yellow.....per do...	70 to 72
White.....per do...	72 to 75
Oats—Choice.....per do...	70 to —
Hay—Choice.....per ton...	28 00 to —
Prime.....per do...	26 00 to 27 00
Pork—Mess.....per barrel..	23 50 to 24 50
Lard—Tierce.....per pound..	12½ to 13½
Keg.....per do...	14½ to 14½
Butter—Choice Western.....per do...	25 to 31
Choice Northern.....per do...	40 to 42
Common Northern.....per do...	25 to 30
Cheese—Choice factory.....per do...	16 to 16½
Western Reserve.....per do...	14½ to 15
Cotton—Ordinary.....per do...	12 to 12½
Low middling.....per do...	14 to 14½
Middling.....per do...	14½ to 15
Tobacco—Lugs, light.....per do...	6 to —
Lugs, heavy.....per do...	7 to —
Low leaf, light.....per do...	7 to —
Low leaf, heavy.....per do...	7½ to —
Medium leaf, light.....per do...	7½ to —
Medium leaf, heavy.....per do...	8 to —
SAN FRANCISCO.	
Flour—State.....per barrel..	5 75 to 7 25
Oregon.....per do...	7 00 to 7 25
Wheat—State.....per bushel..	2 30 to 2 55
Oregon.....per do...	— to —
Corn—White.....per do...	1 40 to 1 55
Yellow.....per do...	— to —
Barley.....per do...	1 35 to 1 45
Oats.....per do...	1 45 to 1 75
Hay—State.....per ton...	12 50 to 16 00
Pork—Mess.....per barrel..	24 00 to 28 00
Prime.....per do...	21 00 to —
Beef—Mess.....per do...	16 00 to 18 00
Lard—In barrels.....per pound..	12½ to 13½
Domestic.....per do...	11 to 12
Butter—State.....per do...	40 to 50
Oregon.....per do...	20 to 25
Overland.....per do...	15 to 37½
Cheese.....per do...	12 to 17
Wool—Native.....per do...	13 to 14
California.....per do...	15 to 18½
Oregon.....per do...	24 to 25

METEOROLOGY.

JANUARY, 1871.

[COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY THE OBSERVERS OF THE SMITHSONIAN INSTITUTION.]

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain-fall, (in inches and tenths,) for January, 1871, as reported by the observers at the stations named. Observations daily at 7 a. m. and 2 and 9 p. m. Table from reports received up to February 18; notes from reports received up to February 15.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain and melted snow.
MAINE.								
Houlton	Aroostook	Charles H. Fernald	6, 14, 16	40	24	-32	87.6	3.70
State Agr. College.	Penobscot	M. C. Fernald	16	40	23	-21	13.3	2.60
Surry	Hancock	Oscar H. Tripp	16	48	23	-19	17.4	.....
Williamsburg	Piscataquis	Edwin Pitman	14	40	23	-30	6.7	3.45
West Waterville	Kennebec	B. F. Wilbur	13, 14	42	23	-15	15.8	2.96
Gardiner	do	R. H. Gardiner	13, 14	40	23	-14	16.6	2.11
Lisbon	Androscoggin	Asa P. Moore	14	52	23, 25	-16	16.3	2.09
Standish	Cumberland	John P. Moulton	14	54	23	-16	18.0	3.64
Norway	Oxford	Howard Smith	14	50	8	-20	15.6	2.40
Cornish	York	Silas West	14	52	23	-14	17.4	2.80
Cornishville	do	G. W. Guptill	14	52	23	-16	18.4	3.10
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	14	48	23	-26	12.3	2.45
Whitefield	do	L. D. Kidder	14	48	10	-29	12.1	1.73
Gorham	do	F. Odell	31	35	23	-22	.....	.....
Mt. Washington	do	J. H. Huntingdon	13	36	22	-42	6.14	.....
Tamworth	Carroll	Alfred Brewster	14	48	8	-29	14.7	2.40
Contoocookville	Merrimack	E. D. Couch	14	50	23	-15	22.3	.....
Goffstown Center	Hillsborough	Alfred Colby	14	56	23	-13	21.4	1.81
VERMONT.								
Lunenburg	Essex	H. A. Cutting	14, 31	45	23	-30	13.7	2.90
Craftsbury	Orleans	Rev. E. P. Wild	13	43	23	-23	10.3	2.28
South Troy	do	James C. Kennedy	13	52	10	-26	18.6	2.57
Randolph	Orange	Charles S. Paine	13	44	23	-16	17.0	1.27
Woodstock	Windsor	Doten & Miller	13	42	23	-20	14.6	1.96
Near St. Albans	Franklin	A. H. I. Gilmour	13	46	23	-26	12.0	1.90
West Charlotte	Chittenden	Miss M. E. Wing	13	53	23	-18	19.0	1.72
Panton	Addison	D. C. and M. E. Barto	13	50	23	-24	14.7	2.62
Castleton	Rutland	Rev. R. G. Williams	13	49	23	-16	18.6	1.53
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	14	62	23	-5	27.8	3.45
Topsfield	Essex	S. A. Merriam	14	50	23	-10	21.9	2.21
Newbury	do	John H. Caldwell	14	62	23	-8	23.5	.....
Lawrence	do	John Fallon	14	55	23	-8	22.3	2.01
Georgetown	do	H. M. Nelson	14	59	23	-7	23.8	2.12
Milton	Norfolk	Rev. A. K. Teele	14	67	26	-3	26.5	4.40
Cambridge	Middlesex	Mrs. & Rev. J. B. Perry	14	60	23, 26	-6	25.5	.....
North Billerica	do	Rev. E. & W. W. Nason	14	60	25	-10	24.3	.....
New Bedford	Bristol	Samuel Rodman	14	56	23	-5	26.6	2.94
Worcester	Worcester	D. T. Morrill	14	55	26	-7	22.0	4.53
Lunenburg	do	Geo. A. Cunningham	14	59	23	-11	22.6	1.85
Mendon	do	John G. Metcalf, M. D.	14	59	26	-9	22.0	1.30
Amherst	Hampshire	Prof. E. S. Sued	13	50	23	-6	23.3	1.96
Richmond	Berkshire	William Bacon	14	56	23	-12	23.4	3.72
Williams College	do	Prof. A. Hopkins	13	55	23	-15	22.2	1.16
Husdsale	do	Rev. E. Dewhurst	14	57	23	-15	19.8	2.38

Table showing the highest and lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain and melted snow.
RHODE ISLAND.								
Newport.....	Newport.....	William A. Barber....	14	56	23	0	29.1	In. 4.97
CONNECTICUT.								
Columbia.....	Tolland.....	William H. Yeomans..	14	62	23, 26	— 6	25.1	2.26
Middletown.....	Middlesex.....	H. D. A. Ward.....	14	57	25	— 9	24.2	3.43
Southington.....	Hartford.....	Luman Andrews.....	14	55	26	— 8	24.3	2.93
Round Hill.....	Fairfield.....	W. P. Alcott.....	14	50	23	— 5	23.8	3.09
NEW YORK.								
Moriches.....	Suffolk.....	E. A. Smith & daugh'rs	13	54	25	— 2	24.7	3.66
South Hartford.....	Washington..	G. M. Ingalsbe.....	13	54	23	—19	20.2	2.78
North Argyle.....	do.....	G. M. Hunt.....	14	45	23	—22	17.5	1.69
Troy.....	Rensselaer.....	John W. Heimstreet..	13	53	26	— 8	24.0	1.60
Garrison's.....	Putnam.....	Thomas B. Arden.....	13	54	26	— 6	26.0	2.86
Throg's Neck.....	West Chester.	Miss E. Morris.....	12, 13	50	10	4	27.7	.....
White Plains.....	do.....	Prof. O. R. Willis & drs	14	54	23, 26	2	26.7	.....
Cooper Union.....	New York.....	Prof. O. W. Morris.....	12	59	26	5	23.8	4.37
Brooklyn.....	Kings.....	Isaac P. Mailler.....	14, 16	51	26	4	29.9	4.15
Flatbush.....	do.....	Rev. Eli T. Mack.....	16	51	26	5	27.8	1.71
Glasco.....	Ulster.....	D. B. Hendricks.....	13	58	26	— 8	18.5	3.45
Newburg.....	Orange.....	James H. Gardiner.....	13	55	26	— 5	26.3	2.53
Minerville.....	Montgomery..	J. W. Bussing.....	13	46	23	—14	19.7	1.80
Cooperstown.....	Otsego.....	G. Pomeroy Keese.....	13, 14	55	23	—18	20.1	1.14
Gouverneur.....	St. Lawrence..	C. H. Russell.....	13	53	23	—30	12.7	1.84
North Hammond.....	do.....	C. A. Wooster.....	13	60	23	—22	16.1	1.39
South Trenton.....	Oneida.....	Storrs Barrows.....	13, 14, 15	48	23	—20	17.4	2.20
Cazenovia.....	Madison.....	Prof. William Soule..	13	54	23	—14	23.0	2.98
Oneida.....	do.....	S. Spooner, M. D.....	13	56	23	—13	26.0	1.14
Depauville.....	Jefferson.....	Henry Haas.....	13	52	23	—21	16.7	2.25
Oswego.....	Oswego.....	William S. Malcolm.....	15	49	23	—16	23.0	1.80
Palermo.....	do.....	E. B. Bartlett.....	13	49	23	—22	20.0	2.70
North Volney.....	do.....	J. M. Patrick.....	13	55	23	—19	21.2	.....
Nichols.....	Tioga.....	Robert Howell.....	14	57	22	— 7	25.6	.....
Newark Valley.....	do.....	Rev. Samuel Johnson..	15	55	9	— 8	24.0	2.30
Rochester.....	Monroe.....	G. P. Hachenberg, M.D	13	58	23	—10	26.3	1.60
Little Genesee.....	Albany.....	Daniel Edwards.....	14	58	4	— 7	23.7	3.63
Angelica.....	do.....	C. P. Arnold.....	14	56	22	—10	24.2	.....
Carlton.....	Orleans.....	M. P. Godfrey.....	13	60	23	— 2	25.0	.....
Suspension Bridge	Niagara.....	W. Martin Jones.....	13	54	23	0	24.3	1.65
Lockport.....	do.....	B. Wheaton Clarke.....	13	59	23	— 2	24.3	1.70
Buffalo.....	Erie.....	William Ives.....	13	56	23	0	26.1	1.82
NEW JERSEY.								
Jersey City.....	Hudson.....	Thomas J. Howard, jr.	13	58	26	7	31.5	.....
Paterson.....	Passaic.....	William Brooks.....	13	50	26	0	26.4	2.81
Newark.....	Essex.....	W. A. Whitehead.....	13	48	26	0	26.7	3.04
South Orange.....	do.....	W. J. Chandler, M. D.	13	60	26	— 4	25.4	2.10
Trenton.....	Mercer.....	E. R. Cook.....	15	62	26	3	30.5	2.03
Rio Grande.....	Cape May.....	Mrs. J. R. Palmer.....	14	60	10	8	32.4	4.28
Moorestown.....	Burlington.....	Thomas J. Beans.....	15	64	26	3	29.3	3.95
New Germantown.....	do.....	A. B. Noll.....	13	51	25	— 3	26.1	2.77
Greenwich.....	Cumberland..	Miss R. C. Sheppard..	15	60	10	9	32.2	2.52
Vineland.....	do.....	John Ingram, M. D.....	14, 15	63	10	1	31.1	6.23
PENNSYLVANIA.								
Nyces.....	Pike.....	John Grathwohl.....	13	61	26	— 4	25.0	2.13
Hamilton.....	Wayne.....	James D. Stocker.....	13, 14	60	23	— 2	26.3	2.05
Dyberry.....	do.....	Theodore Day.....	13	49	10, 22	— 5	21.9	1.97
Fallsington.....	Bucks.....	Ebenezer Hance.....	15	61	26	4	30.0	2.20
Philadelphia.....	Philadelphia.	Prof. J. A. Kirkpatrick	15	64	26	8	32.6	3.61
Germantown.....	do.....	Thomas Meehan.....	15	63	26	3	29.7	.....
Horsham.....	Montgomery..	Miss Anna Spencer.....	15	55	10, 26	5	28.9	3.30
Plymouth Meeting.	do.....	Marcus H. Corson.....	15	62	10	1	28.3	4.04
Egypt.....	Lehigh.....	Edward Kohler.....	13	51	26	0	27.8	.....
Factoryville.....	Luzerne.....	Rodman Sisson.....	14	57	9, 22, 23	— 2	24.7	2.85
Reading.....	Berks.....	J. Heyl Raser.....	15	61	26	10	32.1	2.79
West Chester.....	Chester.....	George Martin, M. D..	15	61	26	4	28.3	3.18
Parkerville.....	do.....	F. Darlington, M. D..	15	59	10	4	28.4	3.25
Catawissa.....	Columbia.....	A. Curtis.....	15	56	25	4	27.1	.....

Table showing the highest and lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain and melted snow.
PENN'A—Cont'd.								
Ephrata	Lancaster	W. H. Spera	14, 15	58	10, 26	4	23.1	3.13
Carlisle	Cumberland	William H. Cook, M. D.	15	57	10, 23, 24	9	29.4	3.05
Fountain Dale	Adams	S. C. Walker	14	59	23	8	30.4	4.00
York S. Springs	York	J. H. Marsden, M. D. ..	15	57	23	8	29.0	3.40
Tioga	Tioga	E. T. Bentley	13	62	4, 22	—	27.6	1.70
Grampian Hills	Clearfield	Elisha Fenton	13	54	9	—	22.3	3.57
Johnstown	Cambria	David Peelor	14	56	10	7	28.7	.....
Franklin	Venango	Rev. M. A. Tolman	14	60	9	—	27.6	3.38
Pittsburg	Allegheny	George Albree	14	64	9	9	32.0	2.70
Connellsville	Fayette	John Taylor	14	66	9	2	32.8	.....
Brownsville	do	J. A. Hubbs, M. D.	14	68	9	9	34.0	.....
New Castle	Lawrence	E. M. McConnell	13, 14	60	25	8	23.9	2.40
Beaver	Beaver	Rev. R. T. Taylor	14	63	9	10	32.3	.....
Canonsburg	Washington	Rev. Wm. Smith, D. D. ..	13	70	4, 9	0	32.5	2.30
DELAWARE.								
Dover	Kent	J. H. Bateman	15	60	10	8	33.1	4.00
MARYLAND.								
Woodlawn	Cecil	J. O. McCormick	12	60	23, 26	5	29.4	2.20
Fallston	Harford	George G. Curtiss	15	61	24	9	32.6	2.40
Woodstock Coll.	Baltimore	Rev. A. X. Valente	15	60	10	4	30.2	2.49
Mt. St. Mary's	Frederick	C. H. Jourdan	15	55	23, 24	10	30.2	2.82
DIST. COLUMBIA.								
Washington	Washington ..	Smithsonian Instit'n ..	15	59	23, 24	16	33.7	2.00
VIRGINIA.								
Johnsontown	Northampton ..	C. R. Moore	13	64	10	13	33.2	2.19
Hampton	Elizab'th City ..	J. M. Sherman	15	64	10	14	33.6	2.60
Comorn	King George	E. T. Tayloe	15	66	10	14	35.3	1.49
Mt. Solon	Augusta	Jas. T. Clarke, M. D.	12	62	9	15	35.4	0.70
Vienna	Fairfax	H. C. Williams	10	65	10, 23, 26	12	37.3	3.70
Fairfax C. H.	do	Miss Lillie Thrift	14	70	24, 25	11	30.7	2.00
Accotink	do	C. Dillingham	14, 15	60	10	8	31.9	4.70
Piedmont Station ..	Fauquier	W. A. Martin	13	69	9	8	32.4	3.03
Piedmont	do	F. Williams	12, 15	58	24	11	32.6	3.05
Keswick Station ..	Albemarle	D. B. Home	13	62	10	17	32.8	.....
Staunton	Augusta	Professor J. C. Covell ..	12	60	9	21	35.7	2.81
Lynchburg	Bedford	C. I. Meriwether	14, 15	62	10	20	40.4	2.75
Near Wytheville	Wythe	Rev. J. A. Brown	12	62	3	17	35.7	2.35
NORTH CAROLINA.								
Goldsborough	Wayne	E. W. Adams, A. M.	14	73	10	22	44.6	1.65
Oxford	Granville	W. R. Hicks, M. D.	14	67	9, 10	22	40.0	1.60
Albemarle	Stanley	F. J. Kron	13	73	4	12	39.5	2.16
Statesville	Iredell	T. A. Allison	13, 14	62	4, 10	14	36.2	4.13
Asheville	Buncombe	E. J. Aston	11, 12, 15	60	9	19	39.4	1.13
Do	do	J. T. E. Hardy, M. D.	12	60	4, 9, 19	18	38.8	.....
SOUTH CAROLINA.								
Gowdeysville	Union	Charles Petty	14	69	4	20	45.4	2.13
GEORGIA.								
Berne	Camden	H. L. Hillyer	31	74	4	27	48.9	.....
St. Mary's	do	Ebenezer Barker	31	83	4	28	52.3	0.80
ALABAMA.								
Rockville	Jefferson	J. H. Shields	14	71	4	18	45.1	3.75
Carlowville	Dallas	H. L. Ahson	13	72	15	26	49.1	5.24
Moulton	Lawrence	Thos. M. Peters, A. M.	12, 13	64	3	22	44.6	5.17
Greene Springs	Hale	H. Tutwiler, LL. D.	24	70	4	18	46.8	5.95
Coatopa	Sunter	S. K. Jennings, M. D.	13	72	4	18	48.0	5.40
Fish River	Baldwin	W. J. Van Kirk	25	70	4	23	.....	6.50

Table showing the highest and lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain and melted snow.
FLORIDA.								
Near Port Orange..	Volusia	S. N. Chamberlin.....	6	76	23	34	56.6	In. 1.02
Jacksonville	Duval	A. S. Baldwin, M. D	31	80	4, 10	33	56.2	0.80
Pilatka	Putnam	Gen. G. D. Robinson.....	{ 24, 26 27, 31 }	80	17	36	58.4	1.10
Newport	Wakulla	Charles Beecher	13	73	4	24	51.9	1.85
TEXAS.								
Clarksville	Red River	Rev. John M. Anderson	11	70	14	17	48.9	.....
Houston	Harris	Miss E. H. Baxter	10, 25	80	14	19	54.5	.....
Oakland	Colorado	F. Simpson	10	77	13	24	54.2	2.48
Bluff	Fayette	Joseph Fietsam	11	76	13, 14	24	52.8	1.93
Clinton	DeWitt	A. C. White	{ 5, 11 24, 30 }	76	13, 14	26	53.5	2.15
Austin	Travis	J. Van Nostrand	11	76	4, 13	24	50.3	2.28
LOUISIANA.								
New Orleans	Orleans	Robert W. Foster	24	80	4, 15	30	53.0	11.15
Ponchatoula	Tangipahoa	H. C. Collins	2	8	4	22	54.4	13.90
MISSISSIPPI.								
Philadelphia	Neshoba	L. A. Bowden	13	68	4	22	46.8	3.40
Grenada	Grenada	J. S. Payne	12	72	3	17	48.3	5.80
Near Brookhaven ..	Lawrence	Mrs. W. E. A. Keenan	12	77	4	17	49.0	6.10
Clinton College ..	Hinds	R. S. Jackson	11, 24, 25	70	14	22	49.3	4.85
ARKANSAS.								
Helena	Phillips	O. F. Russell	12	72	3	16	44.5	.....
Mineral Springs ..	Hempstead	Harmon Bishop	11	68	15	16	43.5	2.09
TENNESSEE.								
Elizabethton	Carter	C. H. Lewis	13	63	3	15	39.2	1.70
Tusculum College ..	Greene	S. S. and Rev. W. S. Doak	14	63	3	13	38.9	.....
Lookout Mountain ..	Hamilton	Rev. C. F. P. Bancroft	13	63	7, 9	22	43.5	.....
Clearmont	Warren	T. P. Wright	14	64	3	16	41.6	3.80
Austin	Wilson	P. B. Calhoun	13	68	3	15	40.8	4.80
Clarksville	Montgomery	Prof. W. M. Stewart	12	67	3	16	40.2	4.83
Trenton	Gibson	W. T. Grigsby	1, 12, 13	67	3	18	44.3	4.05
La Grange	Fayette	W. E. Franklin, M. D	12	69	15	22	43.5	3.20
KENTUCKY.								
Pine Grove	Clark	Sam'l D. Martin, M. D	13, 14	66	7	12	35.3	3.11
Danville	Boyle	O. Beatty	13	70	3	17	38.9	3.34
Shelby City	do	Howard Shriver	13	68	7	16	37.4	3.12
Near Louisville	Jefferson	Mrs. L. Young	12	67	7, 9	13	36.7	3.05
OHIO.								
Salem	Columbiana	J. E. Pollock	13, 14	65	4	2	29.7	1.53
Steubenville	Jefferson	Joseph B. Doyle	14	61	4	19	32.9	2.20
Martin's Ferry	Belmont	C. K. and M. B. Shreve	19	64	9	6	32.3	.....
Painesville	Lake	E. J. Ferris	12, 13	53	4	9	29.5	7.18
Cleveland	Cayuhoga	Mr. & Mrs. G. A. Hyde	13	63	4	6	29.6	1.27
Wooster	Wayne	Martin Winger	12	68	4	—2	31.6	.....
Pennsville	Morgan	T. J. Bingman	14	64	{ 3, 7, 23, 27, 28 }	18	32.9	1.90
Gallipolis	Gallia	A. P. Rogers	16	66	4, 27	16	34.8	2.59
Oberlin	Lorain	S. Herrick	12	61	4	0	28.4	1.35
Sandusky	Erie	Thomas Neill	13	62	4	11	31.2	1.19
Carson	Huron	Mrs. M. M. Marsh	13	62	4	8	32.5	0.65
North Fairfield	do	O. Buras	13	64	4, 24	8	31.4	1.36
Gambier	Knox	F. K. Dunn	14	57	24	15	29.4	4.03
Westerville	Franklin	Prof. John Haywood	14	64	4	12	32.0	1.59
Williamsport	Pickaway	John R. Wilkinson	13	76	23	7	30.0	2.17
North Bass Island ..	Ottawa	Geo. R. Morton, M. D	12	57	4	11	29.1	0.93
Marion	Marion	H. A. True, M. D	13	59	4	8	28.8	.....

Table showing the highest and lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum tem- perature.	Date.	Minimum tem- perature.	Mean tem- perature.	Rain and melted snow.
OHIO—Continued.								
Hillsboro'	Highland	J. McD. Mathews	14	62	7	12	32.1	2.59
Bowling Green	Wood	John Clarke	13	72	4	2	31.7	2.30
Kenton	Hardin	C. H. Smith, M. D.	13	65	23	20	36.5	1.44
Bellefontaine	Logan	William Barringer	13	60	7	8	29.2	1.17
Urbana University	Champaign	M. G. Williams	13	62	4, 7	10	31.3	1.55
Bethel	Clermont	George W. Crane	14	66	7	7	32.9	2.25
Carthage	Mercer	Prof. W. R. Mueller	13	65	7	7	32.0	2.18
Jacksonburg	Butler	I. B. Owsley, M. D.	12	64	7	10	32.1	2.75
Mount Auburn Ins.	Hamilton	Prof. I. H. White	14	67	7	14	34.1	2.52
Cincinnati	do	G. W. Harper	14	70	7	13	34.5	2.34
Do	do	R. C. Phillips	14	66	7	14	34.6	2.48
College Hill	do	John W. Hammitt	14	65	7	9	33.5	3.20
MICHIGAN.								
Detroit	Wayne	F. W. Higgins	12	54	3	—1	26.3	2.61
Monroe	Monroe	Miss H. I. Whelpley	13	66	4	6	30.3	0.97
Ann Arbor	Washtenaw	Mrs. N. H. Winchell	13	58	3	7	27.4	2.41
Macon	Lenawee	David Howell	13	62	3	5	23.9	2.60
Alpena	Alpena	J. W. Paxtor	12	42	22	4	22.2	4.49
Olivet College	Eaton	Prof. A. F. Kemp	12	58	23	4	24.2	5.01
Litchfield	Hillsdale	R. Bullard	12	58	3	2	24.1	3.60
Cold Water	Branch	N. L. Southworth	12	60	3, 4	6	25.8	1.58
Grand Rapids	Kent	E. S. Holmes, D. D. S.	12	59	23	6	25.3	.....
Do	do	L. H. Streng	12	60	23	1	26.5	5.34
Northport	Lelenaw	Rev. Geo. N. Smith	12	48	25	4	22.4	2.23
Benzonia	Benzie	William Wilson	12	49	23	6	23.8	3.53
Muskegon	Muskegon	H. A. Pattison	12	56	{ 23, 25, 26, 28 }	10	28.3	3.90
Copper Falls	Keweenaw	S. H. Whittlesey	10	32	3	—7	11.3	5.05
Ontonagon	Ontonagon	Edwin Ellis, M. D.	10	40	25	—6	17.3	.....
INDIANA.								
Fort Wayne	Allen	R. S. Robertson	12	62	7	4	28.7	1.80
Vevay	Switzerland	Chas. G. Boerner	14	66	7	14	35.5	2.52
Mt. Carmel	Franklin	J. A. Applegate and daughters.	12, 14	60	7	12	30.3	0.90
Laconia	Harrison	Adam Crozier	13, 14	66	9	14	36.7	2.50
Columbia City	Whitley	Drs. McCoy & Maxwell	12	68	7	6	31.7	2.50
Knightstown	Rush	D. Deem	12	63	7	6	31.6	1.69
Indianapolis	Marion	E. Hadley, M. D.	12	62	7	12	32.5	1.44
Near La Porte	La Porte	F. J. Andrew	12	58	7, 27	10	29.1	4.30
Annapolis	Park	B. C. Williams, M. D.	12	62	6, 27	6	28.0	5.10
Merom	Sullivan	B. F. McHenry	12	66	8	16	35.6	2.30
Kentland	Newton	Daniel Spitzer	11	60	4, 6, 17	10	28.8	5.50
New Harmony	Posey	John Chappellsmith	12	67	18	16	36.4	2.62
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr.	12	66	17	9	29.6	8.77
Near Chicago	do	Samuel Brookes	12	62	7	10	28.3	.....
Evanston	do	Prof. O. Marcy	12	61	17	5	27.4	2.90
Marengo	McHenry	J. W. James	12	58	17	0	22.5	2.82
Charleston	Coles	Charles Gramesley	12	64	27	6	30.6	4.25
Mattoon	do	W. E. Henry	12	63	27	13	31.1	4.75
Louisville	Clay	D. H. Chase, M. D.	12	67	18	12	33.9	3.30
Belvidere	Boone	G. B. Moss	12	61	24	—2	23.4	2.84
Decatur	Macon	Timothy Dudley	12	62	18	6	30.4	4.70
Pana	Christian	Thos. Finley, M. D.	12	64	18	4	30.4	4.50
Rochelle	Ogle	Daniel Carey	12	60	27	2	25.5	.....
Wyanet	Bureau	E. S. & Miss Phelps	12	62	18	—12	25.0	3.32
Tiskilwa	do	Verry Aldrich	12	62	27	1	26.4	.....
Hennepin	Putnam	Ethan Osborn	12	62	17	3	26.4	2.59
Peoria	Peoria	Fred. Brendel	12	63	18	2	28.9	2.45
Havana	Mason	Joseph Cochrane	12	62	18	—2	24.9	4.20
Waterloo	Monroe	Chas. Jozef	12	63	18	7	32.2	5.91
Dubuoi	Washington	Wm. C. Spencer	12	66	18	10	33.5	3.15
Galesburg	Knox	Prof. W. Livingston	12	67	18	—5	23.5	2.80
Mauchester	Scott	Dr. J. & C. W. Grant	10	68	18	2	30.9	3.50
Mt. Sterling	Brown	Rev. A. Duncan	12	64	18	—5	31.5	2.65
Audalusia	Rock Island	E. H. Bowman, M. D.	12	63	17	4	27.0	.....

Table showing the highest and lowest range of the thermometer, &c.—Continued.

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ILLINOIS—Cont'd.								
Oquawka	Henderson	R. N. Paterson	12	66	18	— 8	27.8	2.82
Angusta	Hancock	S. B. Mead, M. D.	12	67	18	—12	28.2	4.49
Warsaw	do	B. Whittaker	12	65	18	— 7	27.9	4.58
WISCONSIN.								
Sturgeon Bay	Dove	Rufus M. Wright	12	49	7	— 5	20.3	2.25
Manitowoc	Manitowoc	Jacob Lüps	12	45	4	— 2	23.5	1.98
Hingham	Sheboygan	John De Lyser	12	54	3, 7	1	23.3	.....
Milwaukee	Milwaukee	I. A. Lapham, LL. D.	12	61	4	4	25.9	3.14
Appleton	Outagamie	J. C. Foyé	12	52	4	0	24.3	.....
Geneva	Walworth	William H. Whiting	12	60	17, 28	— 2	32.3	3.25
Rocky Run	Columbia	W. W. Curtis	12	54	24	— 4	21.0	2.13
Madison	Dane	W. W. Daniels	12	55	18	— 2	20.4	2.32
Edgerton	Rock	H. J. Shiels	12	58	18, 24	0	24.2	2.30
Mosinee	Marathon	John O'Donoghue	12	36	3, 18	—13	13.5	3.51
Baraboo	Sauk	M. C. Waite	12	46	18	— 2	20.5	6.13
New Lisbon	Juneau	J. L. Dungan	1	47	25	—12	20.6	.....
Tunnel City	Monroe	Rev. George Pegler	1, 10, 11	44	18	—12	17.2	2.45
Bayfield	Bayfield	Andrew Tate	10	36	18	—10	12.3	.....
MINNESOTA.								
Beaver Bay	Lake	C. Wieland	1, 2, 15	43	22, 28	—16	21.9	4.80
St. Paul	Ramsey	Rev. A. B. Paterson	1	40	18	—15	13.7	1.11
Minneapolis	Hennepin	William Cheney	1	39	18	—23	11.3	1.63
Leech Lake	Cass	H. McMahon, M. D.	10	26	3	—20	5.67	.....
Sibley	Sibley	C. W. & C. E. Woodbury	10	43	18	—18	11.6	0.45
Litchfield	Meeker	H. L. Wadsworth	10	40	18	—13	11.6	0.90
New Ulm	Brown	Charles Roos	1, 10	44	17	—12	12.7	0.58
IOWA.								
Dubuque	Dubuque	Asa Horr, M. D.	11	52	18	— 2	23.3	0.94
Monticello	Jones	Rufus P. Smith	11	51	18	— 6	22.0	1.23
Durant	Cedar	F. A. Ross	12	61	18	— 6	24.7	1.00
Bowen's Prairie	Muscatine	Samuel Woodworth	11	56	18	— 6	21.3	0.60
Fort Madison	Lee	Daniel McCready	12	65	18	—10	27.0	5.37
Guttenberg	Clayton	J. P. Dickerson	1	44	24	— 4	19.1	.....
Mount Vernon	Linn	Prof. A. Collins	11	53	18	— 6	22.8	.....
Iowa City	Johnson	Prof. T. S. Parvin	11	61	18	—10	22.1	1.51
Independence	Buchanan	George Warne, M. D.	1, 11	45	18	— 9	19.6	1.20
Near do	do	Mrs. D. B. Wheaton	11	50	18	—10	18.8	0.80
Rockford	Floyd	H. Wade	10	51	18	—11	19.7	1.05
Algona	Kossuth	James H. Warren	10	48	17	—12	15.0	0.40
Webster City	Hamilton	Clayton I. Croft	10	50	17	—10	19.2	.....
Boonesboro'	Boone	E. Babcock	10	50	18	—10	18.3	0.60
Fontanelle	Adair	A. F. Bryant	10	56	18	— 9	22.2	0.63
Grant City	Sac	Mr. and Mrs. E. Miller	1	52	13, 18	—12	13.3	1.05
Sac City	do	D. B. Nelson	10	51	18	— 8	18.3	3.10
Logan	Harrison	Jacob T. Stern	7, 10	50	13, 18	— 8	22.2	0.60
Woodbine	do	D. R. Witter	1	56	18	—14	19.9	0.41
MISSOURI.								
St. Louis	St. Louis	Rev. F. H. Stuntebeck	11, 12	65	18	8	34.8	1.75
Allenton	do	A. Fendler, M. D.	11	71	16	4	34.3	4.26
Hematite	Jefferson	John M. Smith	11, 12	70	18	11	38.9	4.31
Hannibal	Marion	F. J. Hearne	11	66	18	— 2	30.2	3.80
Rolla	Phelps	Homer Ruggles	11	70	16	— 1	34.9	3.23
Jefferson City	Cole	N. de Wyl	12	70	18	3	33.7	.....
Willard	Greene	R. H. McCord	11	69	16	— 4	32.5	4.65
Kansas City	Jackson	S. W. Salisbury	11	64	13	— 3	29.3	1.75
Oregon	Holt	Wm. Kaucher	10	62	18	— 8	26.7	1.27
Corning	do	Horace Martin	10	64	18	—10	25.4	0.98
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	10	64	18	— 9	27.6	1.10
Williamsburg	Jefferson	John M. Cotton	11	67	27	— 4	28.2	1.48
Leavenworth	Jackson	Dr. J. Stayman	11	67	18	— 8	28.0	2.47
Olathe	Johnson	Watts Beckwith	11	66	13	— 2	28.2	1.1

Table showing the highest and lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain and melted snow.
KANSAS—Continued.								
				°		°	°	In.
Paola	Miami	L. D. Walrad	11	69	18	— 4	30.2	1.25
Baxter Springs	Cherokee	Ingraham & Hayland	11	63	16	— 2	33.6	3.90
Lawrence	Douglas	Prof. F. H. Snow	11	63	18, 27	— 5	28.9	1.11
Holton	Jackson	Dr. James Watters	10	62	13	— 7	27.0	1.00
Burlingame	Osage	R. M. Hoskisson	10	66	13, 18	— 6	33.0	.....
Le Roy	Coffey	J. G. Shoemaker	11	72	13	— 3	32.3	1.17
Burlington	do	John D. Parker			18	— 2	.....	.....
State Agr'l College	Riley	Prof. B. F. Mudge	10	62	18	— 7	28.8	0.53
Council Grove	Morris	A. Woodworth, M. D.	10	68	18	— 3	30.5	1.20
Girard	Crawford	Percy Daniels	11	70	13	0	32.3	2.75
NEBRASKA.								
Omaha Agency	Blackbird	Rev. Wm. Hamilton	4	56	13, 17	— 5	24.0	0.23
De Soto	Washington	Charles Seltz	7	54	14	— 9	21.8	0.54
Bellevue	Sarpy	Mrs. E. Caldwell	7	63	18	— 10	25.2	0.65
Nebraska City	Otoe	Professor P. Zahner	1, 10	57	13	— 8	23.7	1.00
New Castle	Dixon	Louis H. Smith	10	65	16	— 10	20.3	.....
UTAH TER.								
Salt Lake City	Salt Lake	W. W. Phelps	10	60	13	10	33.2	.....
Camp Douglas	Summit	A. C. Ford	9	58	13, 14	10	31.5	2.18
Coalville	do	Thomas Bullock	9	54	13	— 17	24.9	1.00
CALIFORNIA.								
Monterey	Monterey	C. A. Canfield, M. D. ...	3	73	12	31	50.0	5.46
Watsonville	Santa Cruz	A. J. Compton	3	79	12	28	56.1	4.92
Cahto	Mendocino	A. W. Thornton, M. D ..	25	64	12	30	49.4	10.50
Visalia	Tulare	James W. Blake	9	68	12	25	44.9	0.93
Taylorsville	Plumas	Mary E. Pulsifer	31	56	12	8	39.6	.....
MONTANA TER.								
Deer Lodge City	Deer Lodge	Granville Stuart	9	58	12	— 8	30.0	0.46
Missoula	Missoula	Jas. M. Minnesinger	4, 8	52	2, 11, 12	12	34.9	0.76
COLORADO TER.								
Denver	Arapahoe	Byers & Sopris	9	67	12	6	34.3	0.46

NOTES OF THE WEATHER FOR JANUARY, 1871.

Houlton, Me.—Snow two feet deep; sleighing good all the month; cold unusually severe, with high winds.

Gardiner, Me.—Month cold and dry, nearly 2.5° colder than average of thirty-five years, (18.138° .) Total snow this season, 41 inches.

West Waterville, Me.—Mean temperature 0.46° above January average of eight years. Snow-fall of the month, 15.5 inches; now 12 inches in woods.

Oxford, Me.—First good sleighing 2d; coldest day in three years, 23d. Ponds and streams very low; even some deep wells have failed.

Cornishville, Me.—Average January heat for forty years 17° ; this year 18.41° .

Antrim, N. H.—Little snow; unusually cold, but with three thaws this month.

Stratford, N. H.—Drought; some wells frozen; others dry since August.

Whitefield, N. H.—Pond ice 14 inches thick; a cake 22 inches square and 9.5 inches thick weighed 232 pounds. But little snow has fallen.

Goffstown Center, N. H.—The 23d was 11° colder than any day last winter. Many wells yet dry, and drought still severe.

Contocookville, N. H.—Sleighing 4th, wheeling again 14th; aurora 13th; month about average temperature, but below zero on nine days.

Lunenburg, Vt.—Mild January except one week; little sleighing.

South Troy, Vt.—Auroras 3d, 6th, 10th, 13th, 19th, 23d.

Woodstock, Vt.—Drought continues; melting snow for family use.

Randolph, Vt.—The driest January in six years.

Kingston, Mass.—Mean heat 6° degrees lower than in 1870. Drought continues.

New Bedford, Mass.—Harbor open all season; very little good sleighing.

Lunenburg, Mass.—But little sleighing now; 3 inches snow 31st.

Amherst, Mass.—First sleighing 27th; gone 31st.

Middletown, Ct.—Faint aurora 13th; heavy snow-storm all day, with the thermometer below and at zero till 5 p. m.

Southington, Ct.—Streams low or dry again; suffering for water.

Garrison's, N. Y.—Streams and springs remain low; river closed since 20th.

Brooklyn, N. Y.—Heaviest snow-storm of season; changed to sleet 26th.

South Trenton, N. Y.—First thunder 19th. Coldest January for years.

Newburgh, N. Y.—River closed 9th; boys skating 10th; river open 13th; closed 23d.

Depauville, N. Y.—Thermometer fell from 24° to 8° in six hours 21st, 22d; coldest day since January 10th, 1859, 23d; from 22d to 26th, (five days,) the mean was 8° ; coldest spell on my record for twenty-five years; on fourteen mornings it was near or below zero.

North Volney, N. Y.—Mean heat 6.87° below last January, and 5.80° below January, 1869. Rain or snow fell on twenty-three days.

Buffalo, N. Y.—Mean temperature same as for thirteen Januaries, with 11 inches less snow. Snow all gone 30th; rain 30th, 31st.

Newark, N. J.—January in 1870, 7° above, and in 1871, 2.4° below the average of twenty-seven Januaries. Snow-fall on 26th, 6.5 inches; for the month, 16 inches.

Moorestown, N. J.—Plowing ground in order 12th to 17th. Wells, &c., very low.

New Germantown, N. J.—Auroras 13th, 16th; snow 12 inches 26th.

Greenwich, N. J.—First and last ten days cold; middle genial; shad blossom and Shepherd's purse in blossom on 6th; sleighing on four days.
Vineland, N. J.—Month severer than usual; some good sleighing.
Dyberry, Pa.—Wheeling till 22d; first good sleighing 30th. Drought.
Fallsington, Pa.—Delaware closed, second time, 16th; snow-storm 26th.

Philadelphia, Pa.—Snow nearly all day 8th, 23d; heavy snow-storm, 10 inches, 26th, and 3 inches 28th, 29th.

Factoryville, Pa.—Aurora, with streamers, 13th. Snow-fall of the month 20 inches; ground frozen one foot; many wells yet dry.

Reading, Pa.—Winter not severe; sleighing good since 24th.

Catawissa, Pa.—Susquehanna opened 17th; closed again 26th.

Ephrata, Pa.—Aurora 13th; snow-storms all day 23d, 26th.

Carlisle, Pa.—Roads dusty 7th; snows all day 23d, 26th.

Fountain Dale, Pa.—Month 5.72° colder than in 1870, yet creeks open all month. Snow-fall 20.25 inches.

Tioga, Pa.—River opened 16th, closed again 26th; good sleighing since 24th.

Grampian Hills, Pa.—Snow 23d, 6 inches; 26th, 6.5 inches; 28th, 4.5 inches; rain 31st. Cold spells 7th to 10th and 22d to 26th, inclusive.

Connellsville, Pa.—Severe storm, sleet, then freezing rain 23th, 26th.

Franklin, Pa.—Rain all day 15th, then snow 7 a. m. to 1 p. m. of 16th; moderate snow 23d; a few flakes 27th, a. m.; snow-fall 19.75 inches.

Beaver, Pa.—More snow and sleighing than for five years.

Pittsburg, Pa.—Fine snow an hour 23d, all night 25th, then misty rain, freezing as it fell, to 3 p. m. 26th. A cool winter month.

Brownsville, Pa.—A fine winter month; river opened 17th.

Woodlawn, Md.—Aurora 13th; Susquehanna opened 18th; closed again 22d, and remains closed 31st.

Fallston, Md.—Unusually cold snow-storms 23d, 26th.

Ennmitsburg, Md.—Snow 8th, 23d, 28th; great snow-storm 25th, 26th.

Johnsontown, Va.—Cedar and "preacher" birds 12th; chicopee bird 25th; thunder shower 16th; rained all day 26th; hail 25th, 27th.

Hampton, Va.—Lightning 31st; month 7° colder than in 1870; first half no rain or snow; last week wet; five stormy days, seven wholly clear.

Piedmont, Va.—Birds singing 13th; robins 14th. Snow in month, 8 inches.

Accotink, Va.—Hail all day 26th. Snow in month 10 inches.

Wytherville, Va.—Very little snow; ground hard frozen till recently.

Albemarle, N. C.—First rain this year, a thunder-shower, 15th. A dry, cold month; no snow; farmers plowed bottom lands.

Gowdeysville, S. C.—Fine month for farmers; first frog 31st.

Carlouville, Ala.—Thunder-storms 30th, 31st, with heavy wind 26th.

Moulton, Ala.—Generally mild and pleasant; rains near the close.

Rockville, Ala.—Impending rains induced the frogs to sing, 24th.

Jacksonville, Fla.—Orange trees, injured last month, renewing their foliage, and promise crops this year. Thunder-showers; spring weather, and vegetation coming forward.

Houston, Tex.—Auroras 7th, 19th, 29th; ponds frozen 14th, 15th.

Oakland, Tex.—An inch of sleet 13th; prairie wild flower seen 29th.

New Orleans, La.—Continuous thunder-storm, 6.9 inches rain, 25th, 26th.

Ponchatoula, La.—Thunder-storm all night 25th; soft-maple blossoms, 26th; thunder and very large hail with rain 30th; thunder-storm 31st.

Elizabethton, Tenn.—Month pleasant; blue birds here; plowing.

Trenton, Tenn.—Heavy rain with thunder and lightning 30th, p. m.

La Grange, Tenn.—Many smoky days; heavy thunder-showers 30th.

Pine Grove, Ky.—Sleet and rain 25th, 26th; month's snow and sleet, 3 inches.

Shelby City, Ky.—Skating 1st to 10th; robbins 30th; very little snow.

Martin's Ferry, Ohio.—Ohio River opened 13th; song sparrows present nearly all the month; snow on six days, rain on one, sleet on one.

Cleveland, Ohio.—Average January temperature for sixteen years 26.73°, this year 29.56°; rain-fall 2.22 inches, this year 1.27 inches; snow-fall 12.5 inches, this year 12 inches.

North Fairfield, Ohio.—Snow, five inches, 8th; robbins and ravens 13th.

Hillsboro, Ohio.—Snow (3 inches) and sleet 25th; thunder and rain 31st.

Bethel, Ohio.—Bees flying 11th; great sleet, ice half an inch on twigs, cattle slip and fall, 26th; thunder-shower 31st.

Urbana, Ohio.—Snow gone, after twenty-five days, 11th; after seven days, 31st.

Cincinnati, Ohio.—Snow-storm, ending in heavy freezing rain, 25th, 26th; made excellent skating on the thick crust.

College Hill, Ohio.—Canals closed December 21st; Ohio River, 4th instant.

Ann Arbor, Mich.—Cold storm from west; fine freezing rain here 14th, 15th; ended in snow; the icy coating remained until near end of month.

Litchfield, Mich.—Cold rain 14th, 15th; iced and broke down trees and shrubbery, and buildings in some places. No fair day this month.

Coldwater, Mich.—Freezing rain 13th, 14th; ice remains 29th.

Grand Rapids, Mich.—Sleighing twenty-two days; ended 11th. Not severe yet.

Northport, Mich.—Mild winter and month; snow 8 to 12 inches deep; Lake Michigan clear of ice as in summer.

Muskegon, Mich.—Northeast snow-storm, two feet, severest in three years, 14th, 15th.

Ontonagon, Mich.—Every day cloudy; snow on nineteen days; snow-fall 50.5 inches.

Fort Wayne, Ind.—Auroras 12th, 18th, 20th; robbins, blue birds, 13th.

Veray, Ind.—Lovely, mild to 5th; plowing; snow-drops 12th; red birds, wrens, 18th; northeast snow-storm, sleet, freezing rain, 25th, 26th.

Mount Carmel, Ind.—Pleasant winter; little snow and rain this month.

Laconia, Ind.—Heaviest damaging storm of sleet known here, 25th, 25th to 30th.

Kentland, Ind.—Very mild January; but fruit generally killed.

Marengo, Ill.—Warmest January day known here 12th; great snow-storm (about 13 inches) 13th to 15th; no rain or snow reported on 26th.

Charleston, Ill.—Blue birds 6th; freezin grain and sleet 13th to 16th; aurora 19th; snow (2.75 inches) sleet (ice crust $\frac{1}{8}$ inch) 25th; thunder 30th.

Belvidere, Ill.—Freezing rain 13th; snow 14th to evening of 15th, badly drifted, stopping trains; snow 23d, with rain 30th, 31st; good sleighing.

Tiskilwa, Ill.—Snow, (about 18 inches, strong wind,) 13th to 15th.

Dubois, Ill.—Sleet storms all day 13th, 24th; month 3.53° warmer than average of six years.

Galesburg, Ill.—Snow 18 inches, drifted, 13th to 15th, then fine weather.

Mount Sterling, Ill.—Drifting snow-storm 13th to 15th; twenty-one days' sleighing.

Milwaukee, Wis.—Snow 13th to 15th; drifts 6 to 8 feet high.

Baraboo, Wis.—Mild month; good sleighing so far this winter.

Minneapolis, Minn.—Pleasant month; no severe cold or storms.

Litchfield, Minn.—Ground nearly bare till all-day snow of 23d.

New Ulm, Minn.—Aurora 13th. Pleasant month, good sleighing.

Guttenberg, Iowa.—Little snow, no stormy winds, no rains, bad wheeling all winter. Cisterns dry since November, and creeks remain very low.

Independence, Iowa.—A mild month and mild winter.

Rockford, Iowa.—Snow (5 inches) 7th; rain, sleet, snow, 12th and 13th. A beautiful winter, just snow enough for good sleighing.

Boonesboro, Iowa.—Hail, snow, 12th, icy snow 13th. East of Mississippi a snow blockade, while for five hundred miles west only 2 or 3 inches.

Fontanelle, Iowa.—Mist 11th; sleet, snow, 12th; mist, snow, 19th; fog, rain, sleet, snow, 29th; first pewees, 24th.

St. Louis, Mo.—Hail all day 13th, then rain all day 14th, a little snow 15th. River closed December 24, opened on 11th instant.

Hematite, Mo.—Sleet ($4\frac{1}{2}$ inches) 13th, then freezing rain all day 14th, icy cast rendering locomotion dangerous; renewed 25th.

Oregon, Mo.—Snow, sleet, snow, 12th; good sleighing to 20th.

Paola, Kans.—Spring birds and pleasant till the mist, hail, snow, high wind of 12th, then solid winter to 21st. Hard month for stock.

Lawrence, Kans.—Mercury 3.5° higher on 11th than ever known here in January; in 41 hours sunk 72° . Snow-fall 11 inches, 6 inches more than in any previous January.

Holton, Kans.—A dry, windy month; but little snow.

Manhattan, Kans.—Farmers plowing 10th and 11th, but ground frozen most of month.

Council Grove, Kans.—Fine, warm to 12th, wintry to 19th, thawing to 24th, then snow; snow gone 29th, snow 30th, beautiful day 31st.

Camp Douglas, Utah Ter.—Average increase of rain-fall for nine years 3.32 inches per year. Great Salt Lake has risen in that time 80 inches, yielding one-tenth less salt than twelve years ago.

Deer Lodge City, Mont. Ter.—The warmest January known here; average of three years 14.3° ; this year 30th no ice, snow, or sleighing in the valley.

Missoula, Mont. Ter.—Plowing between 17th and 25th.

